Access DB# 494

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Andrea Valenti Examiner #: 78503 Date: 4/9/02
Art Unit: 3643 Phone Number 305-3010 Serial Number: 09/885,829
Mail Box and Bldg/Room Location: CPK5 3411 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method of Controlling Seed Disease

Inventors (please provide full names): ~~[redacted]~~ Kanji Minato

~~[redacted]~~ Katsumi Shigeta

Earliest Priority Filing Date: 6/22/00

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

- microorganism is a bacterium belonging to the genus Pantoea or genus Leclercia which is an antagonist against a pathogen bacterium belonging to the genus Xanthomonas.

- Used in association with seeds and seed borne diseases

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable
Searcher: Jamie Tobb	NA Sequence (#)		STN
Searcher Phone #: 306-5967	AA Sequence (#)		Dialog
Searcher Location: 6k17	Structure (#)		Questel/Orbit
Date Searcher Picked Up: 4/10	Bibliographic	X	Dr.Link
Date Completed: 4/10	Litigation		Lexis/Nexis
Searcher Prep & Review Time: 30	Fulltext	X	Sequence Systems
Clerical Prep Time:	Patent Family		WWW/Internet
Online Time: 210	Other		Other (specify)

PTO-1590 (8-01)

	Type	Hits	Search Text	DBs	Time Stamp
1	BRS	718	47/57.6	USPAT; EPO; JPO; DERWENT	2002/04/08 09:46
2	BRS	3032	47/$.ccls. and 'seed'	USPAT; EPO; JPO; DERWENT	2002/04/08 08:58
3	BRS	293	(47/$.ccls. and 'seed') and 'microorganism'	USPAT; EPO; JPO; DERWENT	2002/04/08 08:59
4	BRS	23	((47/$.ccls. and 'seed') and 'microorganism') and 'sterilize'	USPAT; EPO; JPO; DERWENT	2002/04/08 09:11
5	BRS	1	(47/$.ccls. and 'seed') and 'pantoea'	USPAT; EPO; JPO; DERWENT	2002/04/08 09:34
6	BRS	30	(47/$.ccls. and 'seed') and 'xanthomonas'	USPAT; EPO; JPO; DERWENT	2002/04/08 09:14
7	BRS	0	(47/$.ccls. and 'seed') and 'leclercia'	USPAT; EPO; JPO; DERWENT	2002/04/08 09:36
8	BRS	0	'seed' and 'xanthomonas' and 'pantoea' and 'sterilize'	USPAT; EPO; JPO; DERWENT	2002/04/08 09:37
9	BRS	7	'seed' and 'xanthomonas' and 'pantoea'	USPAT; EPO; JPO; DERWENT	2002/04/08 09:37
10	BRS	15	47/57.6 and 'sterilize'	USPAT; EPO; JPO; DERWENT	2002/04/08 09:50
11	BRS	390	47/58.1 and 'seed'	USPAT; EPO; JPO; DERWENT	2002/04/08 11:17
12	BRS	70	(47/58.1 and 'seed') and ('microorganism' or 'bacterium')	USPAT; EPO; JPO; DERWENT	2002/04/08 09:53
13	BRS	3	((47/58.1 and 'seed') and ('microorganism' or 'bacterium')) and 'sterilize'	USPAT; EPO; JPO; DERWENT	2002/04/08 09:53
14	BRS	2421	'pathogen' and 'antagonist'	USPAT; EPO; JPO; DERWENT	2002/04/08 11:17
15	BRS	467	('pathogen' and 'antagonist') and 'seed'	USPAT; EPO; JPO; DERWENT	2002/04/08 11:17
16	BRS	43	(('pathogen' and 'antagonist') and 'seed') and ('chemical' near 'treatment')	USPAT; EPO; JPO; DERWENT	2002/04/08 11:18

	Type	Hits	Search Text	DBs	Time Stamp
17	BRS	4	((('pathogen' and 'antagonist') and 'seed') and ('chemical' near 'treatment')) and 'biological control agent'	USPAT; EPO; JPO; DERWENT	2002/04/08 11:24
18	BRS	328	'seed' and 'biocontrol'	USPAT; EPO; JPO; DERWENT	2002/04/08 11:25
19	BRS	4	('seed' and 'biocontrol') and 'seedborne disease'	USPAT; EPO; JPO; DERWENT	2002/04/08 11:27
20	BRS	6	('seed' and 'biocontrol') and (('seed' near 'borne') near 'disease')	USPAT; EPO; JPO; DERWENT	2002/04/08 11:33
21	BRS	328	'seed' and 'biocontrol'	USPAT; EPO; JPO; DERWENT	2002/04/08 11:36
22	BRS	64	('seed' and 'biocontrol') and 'seed treatment'	USPAT; EPO; JPO; DERWENT	2002/04/08 14:34
23	BRS	61	'seed' and ('physical treatment' and 'chemical treatment')	USPAT; EPO; JPO; DERWENT	2002/04/08 14:36
24	BRS	38	('seed' and ('physical treatment' and 'chemical treatment')) and ('bacteriu' or 'bacteria' or 'microorganism')	USPAT; EPO; JPO; DERWENT	2002/04/08 14:44
25	IS&R	109	(71/5).CCLS.	USPAT; EPO; JPO; DERWENT	2002/04/08 14:45
26	IS&R	245	(504/100).CCLS.	USPAT; EPO; JPO; DERWENT	2002/04/08 14:45
27	BRS	153	'seed' and 'chlorox'	USPAT; EPO; JPO; DERWENT	2002/04/08 15:18
28	BRS	0	('seed' and 'chlorox') and 'pithium'	USPAT; EPO; JPO; DERWENT	2002/04/08 15:17
29	BRS	2	'leclercia'	USPAT; EPO; JPO; DERWENT	2002/04/08 15:18
30	BRS	59	'pantoea'	USPAT; EPO; JPO; DERWENT	2002/04/09 12:39
31	BRS	2039	'seed' and 'antagonist'	USPAT; EPO; JPO; DERWENT	2002/04/08 15:59
32	BRS	30	('seed' and 'antagonist') and 'xanthomonas'	USPAT; EPO; JPO; DERWENT	2002/04/08 16:40

	Type	Hits	Search Text	DBs	Time Stamp
33	BRS	10	'pantoea' and 'antagonist'	USPAT; EPO; JPO; DERWENT	2002/04/08 16:42
34	BRS	4	('pantoea' and 'antagonist') and 'seed'	USPAT; EPO; JPO; DERWENT	2002/04/08 16:41
35	BRS	1	('pantoea' and 'antagonist') and 'xanthomonas'	USPAT; EPO; JPO; DERWENT	2002/04/08 16:43
36	BRS	164	(('seed' adj 'borne') adj 'disease')	USPAT; EPO; JPO; DERWENT	2002/04/08 16:44
37	BRS	0	((('seed' adj 'borne') adj 'disease')) and 'pithium'	USPAT; EPO; JPO; DERWENT	2002/04/08 16:44
38	BRS	0	((('seed' adj 'borne') adj 'disease')) and 'chlorox'	USPAT; EPO; JPO; DERWENT	2002/04/08 16:44
39	BRS	2	((('seed' adj 'borne') adj 'disease')) and 'xanthomonas'	USPAT; EPO; JPO; DERWENT	2002/04/09 09:24
40	BRS	1	((('seed' adj 'borne') adj 'disease')) and 'pantoea'	USPAT; EPO; JPO; DERWENT	2002/04/08 16:47
41	BRS	1	((('seed' adj 'borne') adj 'disease')) and 'leclercia'	USPAT; EPO; JPO; DERWENT	2002/04/08 16:47
42	BRS	990	'seed' and 'sterilize'	USPAT; EPO; JPO; DERWENT	2002/04/09 08:12
43	BRS	50	('seed' and 'sterilize') and 'chlorox'	USPAT; EPO; JPO; DERWENT	2002/04/09 08:14
44	BRS	38	(('seed' and 'sterilize') and 'chlorox') and ('microorganism' or'bacterium' or 'antagonist')	USPAT; EPO; JPO; DERWENT	2002/04/09 08:16
45	BRS	1103	'seed' and (('microorganism' or 'bacterium') and 'antagonist')	USPAT; EPO; JPO; DERWENT	2002/04/09 09:25
46	BRS	442	('seed' and (('microorganism' or 'bacterium') and 'antagonist')) and 'pathogen'	USPAT; EPO; JPO; DERWENT	2002/04/09 09:35
47	BRS	8	(('seed' and (('microorganism' or 'bacterium') and 'antagonist')) and 'pathogen') and 'xanthomonas campestris'	USPAT; EPO; JPO; DERWENT	2002/04/09 10:21
48	BRS	3	'seed' and ('antibotic' and 'antagonist')	USPAT; EPO; JPO; DERWENT	2002/04/09 12:34

File 344:CHINESE PATENTS ABS APR 1985-2002/MAR
(c) 2002 EUROPEAN PATENT OFFICE
File 347:JAPIO Oct/1976-2001/Dec(Updated 020401)
(c) 2002 JPO & JAPIO
File 350:Derwent WPIX 1963-2001/UD,UM &UP=200222
(c) 2002 Derwent Info Ltd
File 371:French Patents 1961-2002/BOPI 200209
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Set	Items	Description
S1	29	PANTOEA OR LECLERCIA
S2	1379	XANTHOMONAS
S3	23	SEED()BORNE()DISEASE? OR SEED()DISEASE?
S4	25504	SEEDS
S5	40	PATHOGEN? ? AND (MICROORGANISM? OR MICRO()ORGANISM?) AND A-NTAGONISTIC?
S6	62860	STERILIZ? OR STERILIS? OR STERILANT
S7	4	S1 AND S2
S8	1	S3 AND S5
S9	0	S8 NOT S7
S10	25662	ANTAGONIST?
S11	1	S3 AND S10
S12	0	S11 NOT S7
S13	2	S5 AND S6
S14	1	S13 NOT S7
S15	1	S3 AND S6
S16	0	S15 NOT (S7 OR S13)
S17	32	AU="MINATO K" OR AU="MINATO KANJI"
S18	78	AU="SHIGETA KATSUMI"
S19	4	S17 AND S18
S20	3	S19 NOT (S7 OR S13)
S21	1	(S17 OR S18) AND (S3 OR S5)
S22	0	S21 NOT (S7 OR S13 OR S19)

7/5/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

07118739
METHOD FOR PRODUCING HEALTHY SEED

PUB. NO.: 2001-346407 [JP 2001346407 A]
PUBLISHED: December 18, 2001 (20011218)
INVENTOR(s): MINATO KANJI
SHIGETA KATSUMI
APPLICANT(s): TS SHOKUBUTSU KENKYUSHO KK
APPL. NO.: 2000-172313 [JP 2000172313]
FILED: June 08, 2000 (20000608)
INTL CLASS: A01C-001/00; A01G-001/00; A01G-007/00; A01N-025/00; A01N-063/00

ABSTRACT

PROBLEM TO BE SOLVED: To provide a method for producing more amount of healthy seeds in the production stage of seeds for applying to horticultural production of vegetables and flowers or the like with the intention for efficiently controlling seed-infective disease injuries.

SOLUTION: This method for producing healthy seeds comprises treating foundation seeds with an effective microbe having antagonism to pathogen of seed-infective disease injuries. The effective microbe can be applied to the foundation seeds, plants in seed growing or soil for seed growing. As the effective microbe microbes belonging to the genus Bacillus having antagonism to pathogenic bacteria belonging to the genus Alternaria and microbes belonging to the genus **Pantoea** and the genus **Leclercia** having antagonism to pasthogenic bacteria belonging to the genus **Xanthomonas** can be used.

7/5/2 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014335883
WPI Acc No: 2002-156586/200221
XRAM Acc No: C02-048938
XRPX Acc No: N02-119179
Controlling a seed disease due to pathogen involves sterilization of seeds by physical and chemical techniques, followed by treatment with a microorganism, which is antagonistic against the pathogen
Patent Assignee: TS PLANT SCI INST CO LTD (TSPL-N); TS SHOKUBUTSU KENKYUSHO KK (TSSH-N); MINATO K (MINA-I); SHIGETA K (SHIG-I)
Inventor: MINATO K; SHIGETA K
Number of Countries: 029 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1166632	A2	20020102	EP 2001114391	A	20010613	200221	B
CA 2350966	A1	20011222	CA 2350966	A	20010618	200221	
JP 2002003322	A	20020109	JP 2000187893	A	20000622	200221	
US 20020023385	A1	20020228	US 2001885829	A	20010620	200222	

Priority Applications (No Type Date): JP 2000187893 A 20000622
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1166632	A2	E	14	A01N-063/00	
	Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR				
CA 2350966	A1	E		A01N-063/02	
JP 2002003322	A		10	A01N-063/02	
US 20020023385	A1			A01C-001/00	

Abstract (Basic): EP 1166632 A2

NOVELTY - Controlling a seed disease involves sterilization of seeds by at least one of a physical and chemical techniques and then treatment of the sterilized seeds with a microorganism, which is antagonistic against a pathogen of a seed borne disease.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for microorganisms having the accession number PERM BP-7617 and FERM BP-7618.

ACTIVITY - Seed Protectant; Seed Sterilant.

Seeds of cabbage contaminated with **Xanthomonas** campestris p.v. campestris (A) were subjected to a preliminary dry-heating treatment at 40 degrees C for 1 day and then sterilized by using physical technique such that the seeds were subjected to a dry-heating treatment at 75 degrees C for 2 days. The seeds after soaking in a bacterial liquid containing an equal amount of each of 3 strains i.e. TK-12 (**Pantoea** species), TK-151 (**Pantoea** species) and Tk-185 (**Leclercia** adecarboxylcate) for 10 minutes and then dried by blowing air at 35 degrees C for 18 hours. For a first comparison (D1), the seeds were subjected to a dry-heating treatment at 40 degrees C for one day. For another comparison (D2), seeds which were not subjected to any treatment. The test/(D1)/(D2), seeds were shaken in a physiological saline solution (containing 0.85 weight% of NaCl) having 2 - 5 times the weight of seeds for 2.5 hours. The saline solution (100 microl) was streaked on each of mFS culture medium and mCS2OABN culture medium for (A), which was semi-selective medium and incubated at 25 degrees C. A number of colonies of (A) formed on each culture medium in 4 days was counted as a degree of contamination against 1 g of seeds was determined. Further 200 grains of seeds subjected to each treatment were investigated for the germination rates. The results showed that for the test/(D1)/(D2), the degrees of contamination of (A) (colony forming units/g) were 1.63x10 power 2/1.49x10 power 4/3.12x10 power 5 respectively; and germination rates (%) were 93/86.5/and 83.3 respectively.

MECHANISM OF ACTION - Seed borne disease antagonist.

USE - For treating the seeds, which have been contaminated with the pathogen of the seed borne disease, hence useful for growing plants (claimed), which are used in agricultural and horticultural production of seeds e.g. vegetable crops and ornamental plants. The seed borne diseases are e.g. Alternaria Brassicae, Alternaria brassicicola, Peronospora brassicae, Pseudomonas syringae p.v. maculicola, **Xanthomonas** campestric p.v. compestris, and Phoma lingam of the cabbage, Alternaria japonica, Alternaria brassicae, Fusarium oxysporum f. sp. Raphani, **Xanthomonas** campestris p.v. campestris of the radish, Alternaria brassicae, **Xanthomonas** campestris p.v. campestric, Verticillium dahliae of the chinese cabbage, Alternaria dauci, Alternaria radicina, **Xanthomonas** compestris p.v. carotae of the carrot, Septoria apii, Sclerotinia sclerotiorum, Pseudomonas syringae p.v. apii of the celery, Alternaria porri, Botrytis allii, Botrytis byssoidea, Fusarium oxysporum f. sp. cepae and Peronospora destructor of the onion, Peronospora farinoso, Fusarium oxysporum f. sp. spinaciae, Colletotrichum dematium of the spinach, Alternaria Solani, Clavibacter michiganensis subsp. michiganensis, **Xanthomonas** campestris p.v. vesicatoria of the tomato, Alternaria Solani, Phomopsis vexans of the egg plant, Alternaria cucumerina, Pseudomonas syringae p.v. lachrymans, **Xanthomonas** campestris p.v. cucurbitae of the cucumber and other diseases. The diseases of the ornamental plants include Alternarua Znniae, **Xanthomonas** Campestris p.v. Znniae of the common Zinnia, Sclerotinia sclerotiorum, Alternaria helianti of the sun flower, **Xanthomonas** campestris p.v. campestris of the ornamental kale and other diseases.

ADVANTAGE - The method effectively controls seed borne diseases from a seed of a vegetable and ornamental plant to obtain a disease-free seed of high quality having a low onset rate of diseases. The method has a high degree of freedom for sterilization of the seed in combination of physical and chemical technique and effective microorganism. By treating the seed with several microorganisms, a controlling effect against a pathogen can be exerted in a consistent manner even under a variety of cultivating conditions.

pp; 14 DwgNo 0/1
Title Terms: CONTROL; SEED; DISEASE; PATHOGEN; SEED; PHYSICAL; CHEMICAL; TECHNIQUE; FOLLOW; TREAT; MICROORGANISM; ANTAGONIST; PATHOGEN
Derwent Class: C06; D16; P11
International Patent Class (Main): A01C-001/00; A01N-063/00; A01N-063/02
International Patent Class (Additional): A01C-001/08; A01N-025/00; A01N-063/00; A01N-063-00
File Segment: CPI; EngPI

7/5/3 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013961761
WPI Acc No: 2001-445975/200148
XRAM Acc No: C01-135349
Cryoprotectant, useful for cryopreservation of proteins such as metabolic enzymes, comprises product of Erwinia genus, Xanthomonas **genus, Pseudomonas syringae or Pseudomonas viridiflava**
Patent Assignee: GH KANSAI DAIGAKU (KANS-N)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 2001139599	A	20010522	JP 200059444	A	20000303	200148	B

Priority Applications (No Type Date): JP 99240928 A 19990827
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2001139599	A		8	C07K-014/195	

Abstract (Basic): JP 2001139599 A
NOVELTY - A cryoprotectant comprising a product of a microorganism belonging to Erwinia (**pantoea**) genus, **Xanthomonas** genus, Pseudomonas syringae or Pseudomonas viridiflava, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) manufacturing method of cryoprotectant, which involves cultivating microorganism belonging to Erwinia (**pantoea**) genus, **Xanthomonas** genus, Pseudomonas syringae or Pseudomonas viridiflava, at below 30 degrees C;
(2) stabilization/preservation of protein, which involves coexisting of protein with the cryoprotectant; and
(3) an enzyme agent which makes the cryoprotectant or a oxygen containing diagnostic and a kit comprising the enzyme reagent.
USE - For cryopreservation of proteins such as metabolic enzymes, organs or microorganisms.
ADVANTAGE - The cryoprotectant effectively prevents freezing and denaturation of proteins present in enzymes during freezing, even at low concentration.
pp; 8 DwgNo 0/2
Title Terms: USEFUL; PROTEIN; METABOLISM; ENZYME; COMPRISE; PRODUCT; ERWINIA; GENUS; **XANTHOMONAS** ; GENUS; PSEUDOMONAS; PSEUDOMONAS
Derwent Class: B04; D16; D22
International Patent Class (Main): C07K-014/195
International Patent Class (Additional): C07K-014/21; C07K-014/27; C12N-001/04; C12N-001/20; C12N-009/96; C12P-001/04; C12P-021/00; C12R-001-64; C12R-001-38; C12R-001-18
File Segment: CPI

7/5/4 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011034200
WPI Acc No: 1997-012124/199701
Related WPI Acc No: 1998-361700

XRAM Acc No: C97-003435
XRPX Acc No: N97-010475

Pulpwood or pulp treatment for controlling wood-staining fungi - by applying inoculum of bacterium of Pseudomonas fluorescens, Bacillus cereus, Enterobacter or Xanthomonas **campestris, for high porosity**

Patent Assignee: CLARIANT FINANCE BVI LTD (CLRN); UNIV MINNESOTA (MINU) ; SANDOZ PATENT GMBH (SANO)
Inventor: BURNES T A; FARRELL R L; IVERSON S; BLANCHETTE R A

Number of Countries: 029 Number of Patents: 009
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9636765	A1	19961121	WO 96EP2021	A	19960510	199701	B
AU 9658952	A	19961129	AU 9658952	A	19960510	199712	
US 5711945	A	19980127	US 95438823	A	19950511	199811	
EP 824617	A1	19980225	EP 96916043	A	19960510	199812	
			WO 96EP2021	A	19960510		
ZA 9603755	A	19980225	ZA 963755	A	19960510	199813	
BR 9609084	A	19990202	BR 969084	A	19960510	199911	
			WO 96EP2021	A	19960510		
JP 11505299	W	19990518	JP 96534532	A	19960510	199930	
			WO 96EP2021	A	19960510		
NZ 309032	A	19990828	NZ 309032	A	19960510	199939	
			WO 96EP2021	A	19960510		
AU 715371	B	20000203	AU 9658952	A	19960510	200016	

Priority Applications (No Type Date): US 95438823 A 19950511
Cited Patents: 1.Jnl.Ref; WO 9213130; WO 9421854
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9636765	A1	E	56	D21C-009/08	
Designated States (National): AU BR CA JP KR MX NO NZ RU TR					
Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
AU 715371	B			D21C-009/08	Previous Publ. patent AU 9658952 Based on patent WO 9636765
AU 9658952	A			D21C-009/08	Based on patent WO 9636765
US 5711945	A		10	A01N-063/00	
EP 824617	A1	E		D21C-009/08	Based on patent WO 9636765
Designated States (Regional): DE ES FI FR GB PT SE					
ZA 9603755	A		54	B27K-000/00	
BR 9609084	A			D21C-009/08	Based on patent WO 9636765
JP 11505299	W		53	D21C-009/08	Based on patent WO 9636765
NZ 309032	A			D21C-009/08	Based on patent WO 9636765

Abstract (Basic): WO 9636765 A

Pulpwood or pulp is treated by inoculation with one of the bacteria Pseudomonas fluorescens, Bacillus cereus, **Pantoea** (Enterobacter) agglomerans and **Xanthomonas** campestris.

Also new are:

(1) (Hmethod for selecting bacteria that degrade pitch in wood and pulpwood; and

(2) a method of reducing colour staining;

(3) (Ha method of reducing colour staining by staining fungi on wood comprising inoculating at least 25 % of the surface area of the structural wood or debarked log with a colour stain reducing amt. of a bacterium;

(4) (Ha method of reducing colour staining by staining fungi on wood cut from a log comprising inoculating at least 50% of the surface area of the structural wood with a bacterium;

(5) (Hthe bacterium P. agglomerans NRRL B21509 removing pitch from pine,

(6) (Ha bacterium having all the identifying characteristics of B. cereus B21510 removing pitch from pine,

(7) (Ha bacterium having the identifying characteristics of P. fluorescens B21511 removing pitch from pine,

(8) a bacterium having the characteristics;

(9) P. fluorescens B21431 removing pitch from aspen;

(10) P. fluorescens B21432 removing pitch from loblolly pine;

(11) (HX. campestris B21430 or variants and mutants with same pitch degrading properties removing pitch from loblolly pine; and

(12) (Huse of a bacterium of Pseudomonas fluorescens, Bacillus cereus, Enterobacter and **Xanthomonas** campestris for treating pulpwood or pulpUUSEU)

The method is used to reduce the pitch content and to degrade the pit membrane of the pulp or wood used in mfg. cellulosic prods., also to reduce colour caused by staining fungi (claimed).

(UADVANTAGEU)

Treatment with bacteria:

(a) reduces the consumption of chlorine and/or energy;

(b) increases porosity of the wood;

(c) reduces total chemical cooking time; and/or

(d) reduces non-pulped wood chip rejects.

The method is effective on a variety of woods and pulps, does not require sterile conditions and is more flexible than known processes that use fungi.

(UCLAIMED METHOD (1)U)

The bacteria selection comprises:

(i) isolating a first pitch-degrading bacterium from (pulp)wood;

(ii) culturing to determine required properties;

(iii) using to treat pulp or wood;

(iv) isolating a second bacterium isolated; and

(v) (Hgrowing to produce a pure culture from which a pure inoculum having the same desirable characteristics as the first bacterium is isolated.

(UPREFERRED PROCESSU)

The inoculum is in an amt. sufficient on bacterial growth from the inoculum to reduce the pitch content of the pulpwood, and the inoculated pulpwood is maintained under conditions allowing bacterial growth for a time sufficient to reduce the pitch content by the inoculated bacterial growth.

The inoculum is in an amt. sufficient to degrade the pit membrane of the pulpwood, and the inoculated pulpwood is maintained under conditions allowing bacterial growth for a time sufficient for degradation of the pit membrane, and reducing the pulpwood to a fibrous mass.

The inoculated pulp retains at least 60 wt.% of the original lignin content.

Unsterilised pulpwood is inoculated, and is pref. unsterilised refined pulpwood contg. inoculated refined pulpwood accumulated in a mass.

The refined pulpwood is esp. wood chips and the inoculum is applied by spraying of wood chips with th inoculum prior to accumulation of the wood chips in the mass.

The inoculum is obtd. from a biologically pure bacterial culture.

The bacteria pref. has at least the ability to degrade the pit membrane of unsterilised aspen possessed by the strain of NRRL Accession No. 21432.

To degrade pit membranes first stage mechanical pulp or (un)debarked timber or logs are pref. treated.

Bacterial incubation is pref. for 4-20 days.

Unsterilised pulpwood is inoculated, where the inoculated refined pulpwood is accumulated in a mass, the unsterilised refined pulpwood being wood chips, and the bacterium being a Bacillus cereus, or Enterobacter with the ability to reduce pitch on freshly harvested, unsterilised loblolly pine wood chips possessed by the bacterium of NRRL Accession No. B21510 or B21509 respectively.

Pulpwood for treatment is pine, aspen, oak, maple, hickory, birch, spruce or eucalyptus.

To reduce staining, logs with bark still on are treated with B. cereus or P. agglomerans, partic. at the ends and on exposed surfaces not later than 2 weeks after the timber is cut.

The inoculum is applied to a series of scoring marks made along the length of the log.

(UMATERIALSU)

A typical inoculum is 106-1015, (pref. 108-1014), cells per 0.5 kg undried wt.

(UEXAMPLEU)

100 ml Inoculum of B21430 (1.96 multiply 109 cells/ml) were used to inoculate 500 g fresh, non-sterilised southern loblolly pine chips and the mixt. maintained for 14 days in a bag. The chips were dried and extracted with dichloromethane. Dichloromethane extractables (i.e. pitch) were 1.71%; compared with 3.13% for an aged control (non-sterile, no nutrient broth), 2.27% for a non-sterile control with the broth and 3.53% for starting material, i.e. the treatment reduced pitch

content by 51.5%. (STC)

Dwg.0/0

Title Terms: PULPWOOD; PULP; TREAT; CONTROL; WOOD; STAIN; FUNGUS; APPLY; INOCULATE; BACTERIUM; PSEUDOMONAS; FLUORESCENS; BACILLUS; CEREUS; ENTEROBACTER; **XANTHOMONAS** ; CAMPESTRIS; HIGH; POROUS

Derwent Class: D16; F09; P63

International Patent Class (Main): A01N-063/00; B27K-000/00; D21C-009/08

International Patent Class (Additional): B27K-005/00; C12N-001/20; C12S-003/00; C12S-003/08; C12R-001-01; C12R-001-39; C12R-001-64

File Segment: CPI; EngPI

14/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013801419
WPI Acc No: 2001-285631/200130
XRAM Acc No: C01-087491
Controlling pathogenic Anthrax microbes causing degradation, necrosis and other diseases in mangoes, involves cultivating antagonistic microorganisms **and dispersing cultured microbial cells on trunk of mango**
Patent Assignee: MOROMISATO Z (MORO-I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 2001039810	A	20010213	JP 99216488	A	19990730	200130	B

Priority Applications (No Type Date): JP 99216488 A 19990730
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2001039810	A		6	A01N-063/00	

Abstract (Basic): JP 2001039810 A
NOVELTY - Controlling pathogenic Anthrax microbes in mangoes, comprising cultivating **microorganisms** which have an **antagonistic** effect on Anthrax microbes, and dispersing the cultured microbial cells on the trunk of mango tree, is new.
USE - For controlling the degradation, necrosis and other diseases caused by Anthrax microbes in mango trees.
ADVANTAGE - The method effectively reduces the damage caused by Anthrax on mango trees, the agrochemical used in the method is safe to use and is environmentally compatible. The method eliminates the problems due to residual pesticides in mango fruits and provides mango fruits of superior quality with high commercial value. The method provides stable production of mango fruits.
pp; 6 DwgNo 0/3
Title Terms: CONTROL; **PATHOGEN** ; ANTHRAX; MICROBE; CAUSE; DEGRADE; NECROSIS; DISEASE; CULTIVATE; ANTAGONIST; **MICROORGANISM** ; DISPERSE; CULTURE; MICROBE; CELL; TRUNK; MANGO
Derwent Class: C05; D16
International Patent Class (Main): A01N-063/00
File Segment: CPI

20/5/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

06851097 **Image available**
METHOD FOR SUPPLYING WATER TO SEEDLING-RAISING POT AND SEEDLING-RAISING POT WITH WATER SUPPLY CONTAINER

PUB. NO.: 2001-078597 [JP 2001078597 A]
PUBLISHED: March 27, 2001 (20010327)
INVENTOR(s): TSUJIMOTO TAKEO
MINATO KANJI
SHIGETA KATSUMI
MATSUSHITA SHINYA
APPLICANT(s): TS SHOKUBUTSU KENKYUSHO KK
APPL. NO.: 11-260196 [JP 99260196]
FILED: September 14, 1999 (19990914)
INTL CLASS: A01G-027/00; A01G-009/02

ABSTRACT

PROBLEM TO BE SOLVED: To provide a method for supplying water to a seedling raising pot, by which the prevention in the dryness of a culture soil in the seedling-raising pot, the prevention in the shrinkage of the seedling and the improvement of handleability can be achieved by using the gel-like solid product of a water-diluted water glass solution as a water- supplying material.

SOLUTION: This method for supplying water to a seedling-raising pot 12 comprises loading the seedling-raising pot 12 having a seedling 18 planted therein on a water supply container 10 in which a water supply material 14 comprising the gel-like solid product of a water-diluted solution of water glass is charged, and supplying water to the seedling-raising pot 12 through the water supply material 14. The water supply material 14 is preferably obtained by neutralizing the water-diluted solution of the water glass with an acid and then charging the neutralized solution in the water supply container 10 to solidify the solution into the gel-like product. The water glass is preferably a liquid amorphous sodium silicate. It is preferable to dispose a water supply opening 20 in the bottom portion of the seedling-raising pot 12 and then charge the water supply material 14 in the water supply container 10 to bury the water supply opening 20 in the water supply material 14.

20/5/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

06650889
SEED STORAGE

PUB. NO.: 2000-236707 [JP 2000236707 A]
PUBLISHED: September 05, 2000 (20000905)
INVENTOR(s): **MINATO KANJI**
MATSUSHITA SHINYA
SHIGETA KATSUMI
APPLICANT(s): TS SHOKUBUTSU KENKYUSHO KK
APPL. NO.: 11-042809 [JP 9942809]
FILED: February 22, 1999 (19990222)
INTL CLASS: A01C-001/00

ABSTRACT

PROBLEM TO BE SOLVED: To store primed seeds while conveniently and effectively retaining the germinability of primed seeds and also to improve the handling property of primed seeds by enclosing a primed seed and a

desiccant in a specific capsule.

SOLUTION: A primed seed and a desiccant are sealed into a moistureproof capsule. The primed seed is preferably prepared by drying at 15-40°C a seed in a primed and water absorption state. The desiccant is preferably made of granular silica gel having ≤5 wt.% moisture content. The primed seed and the desiccant may be sealed into a moistureproof capsule to form a seed inclusion body.

20/5/3 (Item 3 from file: 347)

05834411

PRODUCTION OF GERMINATION HASTENED SEED

PUB. NO.: 10-117511 [JP 10117511 A]
PUBLISHED: May 12, 1998 (19980512)
INVENTOR(s): TSUJIMOTO TAKEO
MINATO KANJI
MATSUSHITA SHINYA
SHIGETA KATSUMI
SATO HIROSHI
APPLICANT(s): T S SHOKUBUTSU KENKYUSHO KK [000000] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 08-284240 [JP 96284240]
FILED: October 25, 1996 (19961025)
INTL CLASS: [6] A01C-001/00
JAPIO CLASS: 11.1 (AGRICULTURE -- Agriculture & Forestry)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a germination hastened seeds which speedily and uniformly germinate at a high germination rate after seedling while facilitating the selection and handling of active seeds by contacting a water absorbed water absorptive sheet-shaped material and priming-processed seeds.

SOLUTION: The water absorptive sheet-shaped material which is made of hydrophilic porous sintered resin and already absorbes water, and the priming-processed seeds of carrot or radish are contacted, and the germination of seeds having activity is hastened so that the germination hastened seeds can be provided. In this case, it is preferable to contact the water absorptive sheet-shaped material and the priming-processed seeds to hasten the germination of seeds having activity and then to remove germination non-hastened seeds later.

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File   5:Biosis Previews(R) 1969-2002/Mar W5
         (c) 2002 BIOSIS
File   6:NTIS 1964-2002/Apr W2
         (c) 2002 NTIS, Intl Cpyrght All Rights Res
File  10:AGRICOLA 70-2002/Apr
         (c) format only 2002 The Dialog Corporation
File  28:Oceanic Abst. 1964-2002/Jan
         (c) 2002 Cambridge Scientific Abstracts
File  34:SciSearch(R) Cited Ref Sci 1990-2002/Apr W1
         (c) 2002 Inst for Sci Info
File  44:Aquatic Sci&Fish Abs 1978-2002/Apr
         (c) 2002 FAO (for ASFA Adv Brd)
File  50:CAB Abstracts 1972-2002/Mar
         (c) 2002 CAB International
File  65:Inside Conferences 1993-2002/Mar W5
         (c) 2002 BLDSC all rts. reserv.
File  76:Life Sciences Collection 1982-2002/Mar
         (c) 2002 Cambridge Sci Abs
File  94:JICST-EPlus 1985-2002/Feb W4
         (c)2002 Japan Science and Tech Corp(JST)
File  98:General Sci Abs/Full-Text 1984-2002/Feb
         (c) 2002 The HW Wilson Co.
File  99:Wilson Appl. Sci & Tech Abs 1983-2002/Feb
         (c) 2002 The HW Wilson Co.
File 117:Water Resour.Abs. 1967-2002/Feb
         (c) 2002 Cambridge Scientific Abs.
File 143:Biol. & Agric. Index 1983-2002/Feb
         (c) 2002 The HW Wilson Co
File 144:Pascal 1973-2002/Apr W1
         (c) 2002 INIST/CNRS
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File 306:Pesticide Fact File 1998/Jun
         (c) 1998 BCPC
File 357:Derwent Biotech Resource 1982-2002/Apr W2
         (c) 2002 Derwent Info & ISI
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info

Set     Items   Description
S1       1325   PANTOEA OR LECLERCIA
S2      34164   XANTHOMONAS
S3       1302   SEED()BORNE()DISEASE? OR SEED()DISEASE?
S4     394573   SEEDS
S5       1925   PATHOGEN? ? AND (MICROORGANISM? OR MICRO()ORGANISM?) AND A-
            NTAGONISTIC?
S6     100093   STERILIZ? OR STERILIS? OR STERILANT
S7     579864   ANTAGONIST?
S8        105   S1 AND S2
S9          0   S8 AND S3
S10         3   S8 AND S5
S11         2   RD (unique items)
S12         0   S8 AND S6
S13         9   S8 AND S7
S14         8   RD (unique items)
S15         6   S14 NOT S11
S16        12   S8 AND S4
S17         7   RD (unique items)
S18         5   S17 NOT (S11 OR S14)
S19         1   S3 AND S5
S20         1   S19 NOT (S11 OR S14 OR S17)
S21        90   S5 AND S6
S22        90   S21 AND S7
S23        13   S22 AND S4
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S24	12	RD (unique items)
S25	12	S24 NOT (S11 OR S14 OR S17 OR S19)
S26	0	S3 AND S6 AND S7
S27	26	S3 AND S7
S28	17	S27/TI
S29	10	RD (unique items)
S30	10	S29 NOT (S11 OR S14 OR S17 OR S19 OR S24)
S31	4	AU="MINATO KANJI"
S32	6	AU="SHIGETA KATSUMI"
S33	0	(S31 OR S32) AND (S1 OR S2 OR S3 OR S5)

11/3,AB/1 (Item 1 from file: 50)
DIALOG(R)File 50:CAB Abstracts

04004684 CAB Accession Number: 20003006431
Ability of representatives of Pantoea **agglomerans as well as Bacillus subtilis and some species of Pseudomonas genus to inhibit growth of phytopathogenic bacteria and micromycetes and to regulate the plant's growth.**
Romanenko, V. M.; Alimov, D. M.
Institute of Microbiology and Virology, National Academy of Sciences of Ukraine, 154 Zabolotny St., Kyiv, 03143, Ukraine.
Mikrobiologichnii Zhurnal vol. 62 (4): p.29-37
Publication Year: 2000
ISSN: 0201-8462 --
Language: Ukrainian Summary Language: russian; english
Document Type: Journal article
The ability of **Pantoea** agglomerans, Bacillus subtilis and Pseudomonas spp. to inhibit the growth of phytopathogenic bacteria and fungi and to regulate the growth of plants has been studied. Mycelial growth of Fusarium avenaceum (Gibberella avenacea), F. gibbosum (F. equiseti) and F. oxysporum was inhibited by all 13 investigated strains of **Pantoea** agglomerans. F. culmorum growth was inhibited by 2 **Pantoea** agglomerans strains and Bipolaris sorokiniana (Cochliobolus sativus) was inhibited by 7 **Pantoea** agglomerans strains. Eight strains of **Pantoea** agglomerans displayed **antagonistic** activity towards Agrobacterium tumefaciens and Clavibacter, Erwinia, Pseudomonas and **Xanthomonas** spp. **Antagonistic** activity was also demonstrated towards the microflora of cabbage and wheat seeds. Some strains with high **antagonistic** activity to phytopathogenic **microorganisms** have also been found to stimulate seed germination and increase the weight of the cabbage and wheat plants. 22 ref.

11/3,AB/2 (Item 1 from file: 203)
DIALOG(R)File 203:AGRIS

02131352 AGRIS No: 97-078012
Characterization of Pseudomonas spp. and other bacterial species associated with rice seeds
Xie Guan Lin
Philippines Univ. Los Banos, College, Laguna (Philippines)
Thesis Degree: Thesis (Ph.D. in Plant Pathology)
Publisher: , College, Laguna (Philippines), Apr 1996, 174 leaves
Language: English Summary Language: English
Pathogenicity test identified three groups namely: pathogenic, non-pathogenic type 2 and non-pathogenic type 1. The pathogenic group includes Pseudomonas fuscovaginae, B. glumae, A.a.ss avenae, **Xanthomonas** oryzae pv. oryzae and X. oryzae pv. oryzicola and **Pantoea** agglomerans. The major bacterial **pathogens** causing sheath and grain discoloration were identified as P. fuscovaginae, B. glumae and A.a.ss avenae. About 10-30 percent of non-pathogenic bacteria, most of them Pseudomonas spp. were **antagonistic** to one or more pathogenic fungi or bacteria tested. Some of them promoted growth of rice plants. The occurrence of P. fuscovaginae, A.a.ss avenae and B. glumae were associated with rice-rice cropping system, wet season planting and modern variety. However, the high distribution and frequency of P. fuscovaginae were also strongly related to lower altitude (0-200 m) and latitude (14-17 deg), and B. glumae was closely related to higher altitude (200-500 m). The distribution patterns and the attributes influencing expansion and contraction of the non-pathogenic bacterial species were different from those of the pathogenic ones. The distribution and frequency of occurrence of P. putida A1, the most common species, was not limited by any specific attribute. P.fulva was also not restricted to any specific attributes, however, the higher distribution and frequency of occurrence were noted in dry season and rainfed upland. Rice-rice cropping system, irrigated lowland, wet season and modern variety were the four major attributes supporting higher distribution and frequency of occurrence of P. resinovorans, P.

aeruginosa, P. viridilivida A, P. putida B1, P. vesicolaris and S. maltophilia. P. fragi and P. fluorescens preferred an altitude 200-500 m. Wet season, irrigated lowland, rice-rice cropping system and altitude 0-200 m accounted for the higher distribution and isolation frequency of cluster 4 species.

15/3,AB/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13537866 BIOSIS NO.: 200200166687
Control of phytopathogenic bacteria in organic agriculture: Cases of study.
AUTHOR: Varvaro L; Antonelli M; Balestra G M(a); Fabi A; Scermino D
AUTHOR ADDRESS: (a)Dipartimento di Protezione delle Piante, Universita della Tuscia, Via S. Camillo De Lellis, I-01100, Viterbo**Italy E-Mail: balestra@unitus.it
JOURNAL: Journal of Plant Pathology 83 (3):p244 November, 2001
MEDIUM: print
CONFERENCE/MEETING: Eighth Annual Meeting of the Italian Phytopathological Society on Biological Interactions in Plant Pathology Potenza, Italy October 03-05, 2001
ISSN: 1125-4653
RECORD TYPE: Citation
LANGUAGE: English
2001

15/3,AB/2 (Item 1 from file: 50)
DIALOG(R)File 50:CAB Abstracts

03872274 CAB Accession Number: 20001004845
Interactions between Xanthomonas **translucens pv. translucens, the causal agent of bacterial leaf streak of wheat, and bacterial epiphytes in the wheat phyllosphere.**
Stromberg, K. D.; Kinkel, L. L.; Leonard, K. J.
Department of Plant Pathology, University of Minnesota, St. Paul, Minnesota 55108, USA.
Biological Control vol. 17 (1): p.61-72
Publication Year: 2000
ISSN: 1049-9644 --
Language: English
Document Type: Journal article
Forty-five epiphytic bacterial isolates, comprising 39 fluorescent pseudomonads and 5 isolates of Erwinia herbicola (**Pantoea** agglomerans), were tested for their ability to reduce the population size of **Xanthomonas** translucens pv. translucens Rif-2 and to control bacterial leaf streak on wheat when applied preemptively as foliar treatments. Thirteen successful **antagonists** were identified, of these 4 significantly reduced bacterial leaf streak severity but not population size of the pathogen, 8 significantly reduced population size but not disease severity, and 1 significantly reduced both pathogen population size and disease severity. There was a highly significant correlation between the mean population size of the pathogen in the presence of each potential **antagonist** and the mean disease severity. Mean population sizes for poor and successful **antagonists** were not different, but mean population size was positively correlated with the ability to reduce pathogen population size. Antibiotic activity against the pathogen in vitro was observed only in isolate UG1a. The ability of epiphytes to reduce pathogen populations and disease severity could not be predicted on the basis of nutrient-overlap indices. However, sucrose and inositol were utilized more frequently by successful **antagonists** than by poor **antagonists** . 44 ref.

15/3,AB/3 (Item 2 from file: 50)
DIALOG(R)File 50:CAB Abstracts

03857682 CAB Accession Number: 20001004397
Antagonistic **effect of some saprophytic bacteria to Pseudomonas syringae pv. phaseolicola and** Xanthomonas **campestris pv. phaseoli.**
Arsenijevic, M.; Obradovic, A.; Stevanovic, D.; Ivanovic, M.
Faculty of Agriculture, Trg D, Obradovica 8, 21000 Novi Sad, Yugoslavia.

Conference Title: Molecular approaches in biological control. Delemont, Switzerland, 15-18 September, 1997.
Bulletin OILB/SROP vol. 21 (9): p.297-300
Publication Year: 1998
Editors: Duffy, B.; Rosenberger, U.; Defago, G.
Publisher: -- IOBC/WPRS,
ISBN: 92-9067-103-3
Language: English
Document Type: Conference paper; Journal article
The biological control activity of several saprophytic bacteria (Pseudomonas spp., Bacillus sp. and Erwinia herbicola (**Pantoea** agglomerans)) against the bean pathogens Pseudomonas syringae pv. phaseolicola (P. savastanoi pv. phaseolicola) and **Xanthomonas** campestris pv. phaseoli (X. axonopodis pv. phaseoli) was studied in vitro and by seed inoculation of snap bean (Phaseolus vulgaris cv. Palanacka rana). The tested saprophytic bacteria showed different **antagonistic** effects to snap bean pathogens in vitro. The intensity of antagonism varied from weak to very strong, depending on the saprophyte/pathogen combination. No significant **antagonistic** effect was observed on snap been seed in both treatments 7 days after inoculation. 12 ref.

15/3,AB/4 (Item 3 from file: 50)
DIALOG(R)File 50:CAB Abstracts

03389251 CAB Accession Number: 971004229
Mechanisms of biocontrol by Pantoea **dispersa of sugar cane leaf scald disease caused by** Xanthomonas **albilineans.**
Zhang, L.; Birch, R. G.
Department of Botany, University of Queensland, Brisbane, Queensland, Australia.
Journal of Applied Microbiology vol. 82 (4): p.448-454
Publication Year: 1997 --
Language: English
Document Type: Journal article
Albicidins, a family of phytotoxins and antibiotics produced by X. albilineans, are important in sugarcane leaf scald disease development. The albicidin detoxifying bacterium **Pantoea** dispersa (syn. Erwinia herbicola) SB1403 provides very effective biocontrol against leaf scald disease in highly susceptible sugarcane cultivars. The P. dispersa gene (albD) for enzymatic detoxification of albicidin has recently been cloned and sequenced. To test the role of albicidin detoxification in the biocontrol of leaf scald disease, albD was inactivated in P. dispersa by site-directed mutagenesis. The mutants, which were unable to detoxify albicidin, were less resistant to the toxin and less effective in biocontrol of leaf scald disease than their parent strain. This indicates that albicidin detoxification contributes to the biocontrol capacity of P. dispersa against X. albilineans. It is concluded that rapid growth and ability to acidify media are other characteristics likely to contribute to the competitiveness of P. dispersa against X. albilineans at wound sites used to invade sugarcane. 22 ref.

15/3,AB/5 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

15450227 PASCAL No.: 02-0143010
Phylloplane microbiota of Amaranthus hybridus and their effect on shoot disease caused by Choanephora cucurbitarum
EMOGHENE A O; OKIGBO R N
Department of Microbiology, University of Benin, Nigeria; Department of Biological Sciences, Michael Okpara University of Agriculture, Umudike PMB 7267, Umuahia, Abia State, Nigeria
Journal: Tropical agriculture, 2001, 78 (2) 90-94
Language: English
Choanephora cucurbitarum is the causal agent of Amaranthus hybridus shoot

disease, which is primarily associated with the actively growing tips of the shoot. Predominant phylloplane microbiota associated with the A. hybridus shoot under field conditions were **Xanthomonas** campestris, Erwinia herbicola, Bacillus subtilis, and Serratia sp. A considerable zone of inhibition developed between the pathogen C. cucurbitarum and the isolates of X. campestris, E. herbicola, and B. subtilis on potato dextrose agar (PDA) plates. No zone of inhibition developed between the pathogen and Serratia sp. Inoculation of A. hybridus plants with C. cucurbitarum and the isolated phylloplane micro-organisms showed a remarkable reduction in the subsequent incidence of disease. Sixty-seven per cent of A. hybridus plants showed disease symptoms when it was inoculated with X. campestris or E. herbicola, while 33.3% developed the shoot disease when B. subtilis was applied. This study confirmed that biological control operates in nature, a situation that can be exploited to control shoot disease of A. hybridus caused by C. cucurbitarum.

15/3,AB/6 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal

11503060 PASCAL No.: 94-0343318
Phylloplane microflora for the control of bacterial leaf blight of rice caused by Xanthomonas **oryzae pv. oryzae**
SAIKA P; CHOWDHURY H D
Assam agricultural univ., dep. plant pathology, Jorhat 785 013, India
Journal: Indian Phytopathology, 1993, 46 (3) 218-223
Language: English

18/3,AB/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10979175 BIOSIS NO.: 199799600320
Bacterioses of sesame (Sesamum indicum L.).
AUTHOR: Korobko A P
AUTHOR ADDRESS: Inst. Microbiol. Virol., Natl. Acad. Sci. Ukr., 154 Zabolotny St., Kiev 252143**Ukraine
JOURNAL: Mikrobiolohichnyi Zhurnal 59 (2):p53-61 1997
RECORD TYPE: Abstract
LANGUAGE: Russian; Non-English
SUMMARY LANGUAGE: Russian; Ukrainian; English

ABSTRACT: Sesame bacterioses have been first studied under the conditions of Ethiopia. Two types of damage have been found: spotting and stem rot ("block stem"). Spotting is caused by two species of bacteria: Pseudomonas syringae pv. sesami and **Xanthomonas** campestris pv. sesami. **Pantoea** agglomerans (Erwinia herbicola) is a permanent satellite of the above agents. The disease is harmful and distributed in all the regions of sesame production; the damage achieves 30-100%. "Black stem" is evoked by Erwinia carotovora subsp. carotovora at the stage of seedlings and young plants. Agents are preserved and transferred with **seeds** . Ceresan, polychom and cuprosan are efficient means for **seeds** disinfection.
1997

18/3,AB/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09593021 BIOSIS NO.: 199598047939
Identification of gram-negative bacteria isolated from buckwheat seeds .
AUTHOR: Iimura Kazuo(a); Hosono Akiyoshi
AUTHOR ADDRESS: (a)Motojiya Co. Ltd., 8-12 Futaba, Matsumoto, Nagano 390** Japan
JOURNAL: Journal of the Food Hygienic Society of Japan 35 (5):p525-529 1994
ISSN: 0015-6426
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Japanese; Non-English
SUMMARY LANGUAGE: Japanese; English

ABSTRACT: Gram-negative bacteria isolated from buckwheat **seeds** harvested in Nagano and Hokkaido were identified and their phenotypical characters were studied. Glucose-fermentative gram-negative bacteria **Pantoea** agglomerans and Erwinia ananas were identified as dominant bacteria in the seed samples examined. The former gave the highest umber of isolates. On the other hand, Pseudomonas syringae, Pseudomonas oryzihabitans, **Xanthomonas** maltophilia and Flavobacterium aquatil were identified as dominant glucose-non-fermentative gram-negative bacteria.

1994

18/3,AB/3 (Item 1 from file: 10)
DIALOG(R)File 10:AGRICOLA

3905493 22682310 Holding Library: AGL
Bacterial populations associated with rice seed in the tropical environment
Cottyn, B. Regalado, E.; Lanoot, B.; Cleene, M. de.; Mew, T.W.; Swings, J.
St. Paul, Minn. : American Phytopathological Society, 1911-
Phytopathology. Mar 2001. v. 91 (3) p. 282-292.
ISSN: 0031-949X CODEN: PHYTAJ

DNAL CALL NO: 464.8 P56
Language: English

During the 1995 wet season, harvested rice seed was collected from farmers' fields at different locations in Iloilo, Philippines. Bacterial isolations from crushed seed yielded 428 isolates. The isolates were characterized by BOX-polymerase chain reaction fingerprinting of total genomic DNA and represented 151 fingerprint types (FPT). Most FPTs were found on a single occasion, although matching fingerprints for isolates from different samples also were found. Identifications were made by cellular fatty acid methyl ester analysis and additional use of Biolog GN/GP MicroPlates and API 20E/50CHE systems. The predominant bacteria were Enterobacteriaceae (25%), Bacillus spp. (22%), and Pseudomonas spp. (14%). Other bacteria regularly present were identified as **Xanthomonas** spp., Cellulomonas flavigena, and Clavibacter michiganense. Of the total number of isolated bacteria, 4% exhibited in vitro antifungal activity against Rhizoctonia solani or Pyricularia grisea. Two percent of isolates were pathogens identified as Burkholderia glumae and Burkholderia gladioli. Five percent of isolates induced sheath necrosis on only 50 to 90% of inoculated plants and were related to Bacillus pumilus, Paenibacillus spp., Pseudomonas spp., and **Pantoea** spp.

18/3,AB/4 (Item 1 from file: 50)
DIALOG(R)File 50:CAB Abstracts

03781870 CAB Accession Number: 991006086

Pathogenic bacteria associated with rice seed in the subtropic and the tropic areas.

Xie GuanLin; Zheng JiChi; Mew, T. W.
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Language: English Summary Language: chinese
Document Type: Journal article

A field survey of rice bacterial diseases and their causal organisms was conducted in the Zhejiang Province of China (subtropical) and Luzon island of the Philippines (tropical) during 1993-98. Two hundred and eighty pathogenic bacterial isolates were screened from over 3500 isolates associated with rice **seeds** from 116 seed samples collected in the subtropics and 129 seed samples from the tropics. The data revealed that bacterial leaf blight (**Xanthomonas** oryzae pv. oryzae) and bacterial leaf streak (X. oryzae pv. oryzicola) are still important in the 2 zones but some new bacterial diseases have also emerged. Several bacterial species may be involved in a disease. The isolation frequency of the pathogenic bacteria was about 9% and 6% in the tropics and subtropics, respectively. Eleven bacterial species (Acidovorax avenae subsp. avenae, Burkholderia glumae, Erwinia chrysanthemi pv. zeae, **Pantoea** agglomerans, Pseudomonas fuscovaginae, X. oryzae pv. oryzae, X. oryzae pv. oryzicola, Pseudomonas aeruginosa, P. fluorescens, P. fulva and P. putida) were differentiated by bacteriological and numeric taxonomy (Biolog) methods. Most of the isolates from 4 species of Pseudomonas did not induce any symptoms on rice plants. The unknown bacteria related to poor germination and seedling growth need to be surveyed further and identified. 20 ref.

18/3,AB/5 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

12874552 PASCAL No.: 97-0135138

Characterization of ribosomal RNA intergenic spacer region of several seedborne bacterial pathogens of rice

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Journal: Seed science and technology, 1996, 24 (3) 571-580
Language: English

Polymorphism within 16S and 23S rDNA of seven seedborne bacteria was determined. Fifty-one strains of the six major rice bacterial pathogens, Pseudomonas avenae, P. glumae, P. fuscovaginae, P. syringae pv. syringae, **Xanthomonas** oryzae pv. oryzae, X. o. pv. oryzicola, and Erwinia herbicola isolated from rice **seeds** were examined by PCR-amplification of ribosomal DNA of the intergenic spacer region, using ribosomal primers R16-1 and R23-2R. The pseudomonads contained significant interspecies but little intraspecies polymorphism. All Korean strains were the same, however, the strains from Columbia were significantly different. X. o. pv. oryzae showed a species-specific fragment and no variation between strains. Both pathovars of X. oryzae were easily differentiated from each other based on differences in a secondary fragment. These results show that PCR-amplification using commercial primers of rDNA intergenic spacer region can provide a rapid, reliable tool for the identification of the major seedborne bacteria of rice.

20/5/1 (Item 1 from file: 76)
DIALOG(R)File 76:Life Sciences Collection

01101238 1672183
Biocontrol of seed-borne Alternaria raphani and A. brassicicola .
Vannacci, G.; Harman, G.E.
Dip. Coltivazione e Difesa Specie Legnose, Sez. Patol. Veg., Univ. Pisa, Via del Borghetto, 80-561100 Pisa, Italy
CAN. J. MICROBIOL./J. CAN. MICROBIOL. vol. 33, no. 10, pp. 850-856 (1987.)
DOCUMENT TYPE: Journal article LANGUAGE: ENGLISH SUMMARY LANGUAGE: FRENCH
SUBFILE: Microbiology Abstracts Section C: Algology, Mycology and Protozoology; Microbiology Abstracts Section A: Industrial and Applied Microbiology; Biotechnology Abstracts

Forty-two **microorganisms** were tested as biological control agents against Alternaria raphani and A. brassicicola . Tests were conducted for in vitro **antagonistic** ability, for ability to control the **pathogens** on naturally infected seeds germinated on moistened blotters, and in planting mix in growth chamber studies, and for their ability to reduce pod infection. The blotter test indicated that six organisms increased both the number of healthy seedlings and the number of seedlings produced from A. raphani infected radish seeds. An additional seven strains improved either germination or increased the number of healthy seedlings. Twenty-nine organisms increased the number of healthy cabbage seedlings from A. brassicicola infected seeds, but total germination was not modified by any treatment. Experiments in planting mix showed that five antagonists (Chaetomium globosum , two strains of Trichoderma harzianum, T. koningii , and Fusarium sp.) increased the number of healthy plants in both radish samples tested, while four additional antagonists provided a significant increase in only one of the samples tested.

DESCRIPTORS: **seed - borne diseases** ; Alternaria raphani; Alternaria brassicicola; biological control; fungi; Raphanus sativus; seed treatments
IDENTIFIERS: antagonism
SECTION HEADING: 03092 --Others; 01031 --Antifungal & fungicidal agents; 01043 --Seed treatments; 01028 --Others; 30513 --Pest control

25/3,AB/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11184407 BIOSIS NO.: 199799805552
Mycoparasitism of Pythium ultimum by antagonistic **binucleate Rhizoctonia isolates in agar media on capsicum** seeds .
AUTHOR: Siwek K(a); Harris A R; Scott E S
AUTHOR ADDRESS: (a)South Australian Res. Development Inst., PMB, Glen Osmond, SA 5064**Australia
JOURNAL: Journal of Phytopathology (Berlin) 145 (10):p417-423 1997
ISSN: 0931-1785
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English; German

ABSTRACT: Hyphal interactions between two **antagonistic** binucleate Rhizoctonia isolates (BNR) and the seedling damping-off **pathogen** , Pythium ultimum var. sporangiiferum, were observed by both light- and scanning electron microscopy (SEM), on agar media and on capsicum **seeds** in **sterilized** potting mix. Both BNR isolates displayed similar mycoparasitic behaviour towards P. u. sporangiiferum on agar media. This included parallel growth along the **pathogen** hyphae, formation of hook-shaped hyphal tips and coils on the surface of P. u. sporangiiferum hyphae and penetration and growth within **pathogen** structures. Disruption of cytoplasmic streaming and disorganisation of **pathogen** cytoplasm were also observed. SEM observations revealed alterations in P. u. sporangiiferum cell wall structure and the presence of penetration holes apparently due to digestion by the BNR. P. u. sporangiiferum was also parasitised by both BNR isolates on capsicum seed coats, with parallel growth, hook formation and coils commonly observed. The above observations indicated that mycoparasitism is a possible mode of action of BNR against P. u. sporangiiferum.

1997

25/3,AB/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11184349 BIOSIS NO.: 199799805494
Fusarium spp. occurrence during germination and successive growth of young wheat plants. Study of microbial soil activity against phytopathogenic fungi.
AUTHOR: Ludvik Tvaruzek
AUTHOR ADDRESS: Agricultural Res. Inst. Kromeriz Ltd., Kromeriz**Czech Republic
JOURNAL: Cereal Research Communications 25 (3 PART 2):p681-683 1997
ISSN: 0133-3720
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The **antagonistic** activity of different soils against phytopathogenic fungi was assessed on winter wheat **seeds** infected with Fusarium culmorum (W.G. Smith) Sacc. The results showed highly significant influence of soil origin (location) and soil **antagonistic** activity by comparing **sterilized** vs. natural soil. Varietal differences of wheat were significant, too. Possible methods of soil **antagonistic** activity testing are discussed.

1997

25/3,AB/3 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11017229 BIOSIS NO.: 199799638374
Analytical models of weed biocontrol with sterilizing **fungi: The consequences of differences in weed and** pathogen **life-histories.**
AUTHOR: Smith M C; Holt J
AUTHOR ADDRESS: Natural Resources Inst., Univ. Greenwich, Central Ave., Chatham Maritime, Kent ME4 4TB**UK
JOURNAL: Plant Pathology (Oxford) 46 (3):p306-319 1997
ISSN: 0032-0862
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A model of the population dynamics of healthy weed plants, weed **seeds** in the soil, **pathogen** -infected weed plants and **pathogen** spores in the soil, was devised to investigate interactions that are important for the success of biocontrol with **pathogens** that prevent seed set. Three particular features of the host- **pathogen** interaction were examined in detail: the form of the density dependent relationship which determined seed and spore production, the host life stage at which infection could occur, and the relative competitive abilities of healthy and infected host plants. It was found that, when both weed and **pathogen** coexist, the equilibrium abundance of the weed in the presence of the **pathogen** was independent of the form of the relationship between plant density and seed or spore production. However, the form of this relationship did affect estimated equilibrium densities in the absence of biocontrol, and also affected the parametrizations under which both host and **pathogen** could coexist. Parameters derived from experiments with isolated host plants may therefore be sufficient to assess the biocontrol potential of new **pathogens** along with knowledge of densities achievable when the weed is uncontrolled. The form of the relationship used to control seed and spore production also had a marked influence on the range of parameter values over which the **pathogen** could persist. Other control measures were represented by changes to appropriate parameter values, e.g. weeding was represented by a change in weed death rate. With one exception, the use of additional control measures was not **antagonistic** to biocontrol. Often, however, the combined effect was less than additive, and the existence of synergy (where the combined effects are more than additive) was critically dependent on the form of the relationship of the rate of seed production per plant with density and the efficiency of the other control measures.

1997

25/3,AB/4 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10519988 BIOSIS NO.: 199699141133
Effects of Streptomyces corchorusii, Streptomyces mutabilis, pendimethalin, and metribuzin on the control of bacterial and Fusarium wilt of tomato.
AUTHOR: El-Shanshoury Abd El-Raheem R(a); El-Sououd Soad M Abu; Awadalla Omima A; El-Bandy Nabila B
AUTHOR ADDRESS: (a)Botany Dep., Fac. Sci., Tanta Univ., Tanta**Egypt
JOURNAL: Canadian Journal of Botany 74 (7):p1016-1022 1996
ISSN: 0008-4026
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English; French

ABSTRACT: Two Streptomyces spp. and two herbicides were used to control the **pathogens** of tomato wilt disease in vitro and in vivo. In vitro studies showed inhibitory effects of Streptomyces corchorusii against Fusarium oxysporum f.sp. lycopersici (Sacc.) and inhibitory effects of Streptomyces mutabilis against Pseudomonas solanacearum. In cultures amended with pendimethalin or metribuzin, the growths of P. solanacearum and F. oxysporum were inhibited. The degree of growth inhibition was proportional to the herbicide concentration, with pendimethalin being

more effective than metribuzin, and maximum inhibition was at 2.0 times 10-3 M. The growth of S. corchorusii and S. mutabilis was slightly inhibited or enhanced by the herbicides. Supplementation of the herbicides to culture media of the **antagonistic** Streptomyces spp. increased their inhibitory effects against P. solanacearum and F. oxysporum that were proportional to the herbicide concentrations. Soaking **seeds** of tomato in the herbicides prior to sowing in **sterilized** and raw soils and applying S. corchorusii and (or) S. mutabilis to the soils artificially infested with P. solanacearum and (or) F. oxysporum f.sp. lycopersici (Sacc.) 40 days after transplanting revealed significant interactions that gave better control of wilt than either applied alone. The combination of **antagonistic** Streptomyces spp. was more effective with pendimethalin than with metribuzin and in nonsterilized soil than in **sterilized** soil. The combination of pendimethalin with S. corchorusii, S. mutabilis, or S. corchorusii plus S. mutabilis was more effective than the single treatment with microbial **antagonists** or the herbicide against F. oxysporum, P. solanacearum, and Pseudomonas plus Fusarium, respectively. In both soils, the combination of microbial **antagonists** with pendimethalin was most effective at 2.0 times 10-3 M, disease incidence being reduced to zero and the percent colonization of either **pathogen** being the lowest. The results also revealed that these combinations minimized the negative effects of the **pathogens** on tomato growth. This work demonstrates that two compatible control agents, biological and chemical, can be combined to give additional control of a plant **pathogen** .

1996

25/3,AB/5 (Item 5 from file: 5)

10424230 BIOSIS NO.: 199699045375
Formation of Tomatine in tomato plants infected with Streptomyces species and treated with Herbicides, correlated with reduction of Pseudomonas solanacearum and Fusarium oxysporum f. sp. lycopersici.
AUTHOR: El-Shanshoury Abd El-Raheem R(a); El-Sououd S M Abu; Awadalla O A; El-Bandy Nabila B
AUTHOR ADDRESS: (a)Bot. Dep., Fac. Sci., Tanta Univ., Tanta**Egypt
JOURNAL: Acta Microbiologica Polonica 44 (3-4):p255-266 1995
ISSN: 0137-1320
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Pretreatment of tomato **seeds** with pendimethalin or metribuzin and inoculation of seedlings with the **antagonistic** Streptomyces corchorusii or/and Streptomyces mutabilis were tested for the formation of tomatine in roots and stems of tomato, infested with Pseudomonas solancearum or/and Fusarium oxysporum f. sp. lycopersici. All treatments induced the formation of variable quantities of tomatine, compared with untreated control. The variation was proportional to: the **pathogen** , Fusarium was more stimulating than Pseudomonas; the **antagonistic** organism, S. corchorusii being more eliciting than S. mutabilis; the herbicide and its concentration, pendimethalin at 2 times 10-3 M being the most eliciting of tomatine; and according to the soil, plants grown in non- **sterilized** soil accumulated more tomatine than did these grown in **sterilized** soil. In all treatments, stems had more tomatine than roots and non- **sterilized** soil was better than **sterilized** soil. The **antagonistic** streptomycetes induced accumulation of tomatine more than did the herbicides. The highest amounts of tomatine were detected in plants pretreated with pendimethalin at 2 times 10-3 M, grown in non-**sterilized** soil, infested with F. oxysporum, and inoculated with S. corchorusii and S. mutabilis. The effect of the extracted tomatine on the growth of Fusarium and Pseudomonas was examined in vitro. The crude extract of tomatine from all treatments reduced growth and sporulation of F. oxysporum and growth of P. solanacearum in defined media. The

reduction varied according to the treatment and was proportional to the quantities of extracted tomatine, the highest amounts being the most effective. The mechanism of phytoalexins in controlling tomato wilt **pathogens** was also discussed.

1995

25/3,AB/6 (Item 6 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09137936 BIOSIS NO.: 199497146306
Antagonistic **microflora from dried maize seed and their effect on seed germination.**
AUTHOR: Adetuyi F C; Olowoyo O O
AUTHOR ADDRESS: Biol. Dep., Microbiol. Lab., Fed. Univ. Technol., P.M.B. 704, Akure**Nigeria
JOURNAL: Indian Journal of Mycology and Plant Pathology 23 (2):p157-161 1993
ISSN: 0303-4097
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English; Hindi

ABSTRACT: Surface **sterilized** maize **seeds** with 3% sodium hypochlorite were screened for the presence of resident bacteria and fungal flora **antagonistic** to the growth of **pathogens** . Twenty six bacteria and six fungi were isolated. The bacteria were used to challenge the fungi. Eleven bacteria were **antagonistic** to Rhizoctonia zea, Fusarium moniliforme, Macrophomina phaseoli (Rhizoctonia betaticola), Alternaria alternata and Curvularia spp on maize seed agar. The degree of antagonism varied among isolates. Coating the maize **seeds** with some of the isolates increased the germination and promoted the growth of maize seedlings as indicated by measurement of shoot and root length.

1993

25/3,AB/7 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07323874 BIOSIS NO.: 000090103775
SELECTION OF ANTAGONISTIC MICROORGANISMS **TO PYRICULARIA-ORYZAE FOR CONTROLLING RICE BLAST**
AUTHOR: BETTIOL W H K
AUTHOR ADDRESS: EMBRAPA/CENTRO NACL. PESQUISA DEFESA AGRIC., CAIXA POSTAL 69, 13820-JAGUARIUNA, SP, BRASIL.
JOURNAL: SUMMA PHYTOPATHOL 15 (3-4). 1989. 257-266. 1989
FULL JOURNAL NAME: Summa Phytopathologica
CODEN: SUPHD
RECORD TYPE: Abstract
LANGUAGE: PORTUGUESE

ABSTRACT: A survey of **microorganisms** , most from soil and various parts of the rice plant, was carried out to test for antagonism against Pyricularia oryzae. The technique used was isolation and an in vitro qualitative test using potato-dextrose-agar as substrate. A high was shown. 348 out of 472 frequency of **antagonists** tested. The majority was obtained from leaves, but roots, **seeds** and soils also yielded **antagonists** . All localities surveyed showed occurrence of **antagonists** . Twenty-seven isolates of bacteria were selected on the basis of the **pathogen** mycelial growth inhibition (PIP) and the PIP/ **antagonist** growth ratio, by using the double culture technique. These isolates were AP-3, AP-12, AP-42, AP-48, AP-49, AP-51, AP-85, AP-91, AP-94, AP-105, AP-114, AP-115, AP-137, AP-150, AP-165, AP-181, AP-183, AP-203, AP-323,

AP-332, AP-339, AP-365, AP-366, AP-401, AP-420, AP-429 and AP-471. The selected **antagonists** were preserved: a) by successive sub-culturing; b) in destilled water (Castellani technique) and c) in **sterilized** soil, where they remained viable for at least six months, 2 and 1 years, respectively. All **antagonistic** isolates belong to the species Bacillus subtilis, as determined by cellular morphology, cell dimensions, cultural characteristics, growth at different temperatures, reaction to stain methods plus selective media and biochemical tests.

1989

25/3,AB/8 (Item 8 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07228089 BIOSIS NO.: 000090007953
BIOLOGICAL CONTROL OF FUSARIUM-OXYSPORUM-F-SP-CUCUMERINUM CAUSING CUCUMBER WILT BY GLIOCLADIUM-VIRENS AND TRICHODERMA-HARZIANUM
AUTHOR: CHO C T; MOON B J; HA S Y
AUTHOR ADDRESS: DEP. AGRIC. BIOL., COLL. AGRIC., DONG-A UNIV., PUSAN 604-714, KOREA.
JOURNAL: KOREAN J PLANT PATHOL 5 (3). 1989. 239-249. 1989
FULL JOURNAL NAME: Korean Journal of Plant Pathology
CODEN: HSPHE
RECORD TYPE: Abstract
LANGUAGE: KOREAN

ABSTRACT: **Antagonistic** activities of 56 Gliocladium isolates and 9 Trichoderma isolates obtained from cucumber and strawberry fields, respectively, against Fusarium oxysporum f. sp. cucumerinum were tested in vitro. A Gliocladium GC27 isolate that inhibited mycelial growth of the **pathogen** remarkably by non-volatile antifungal antibiotics was identifed as Gliocladium virens. Trichoderma harzianum T42 had the highest mycoparasitic effect and low antibiosis to the **pathogen** . The antibiosis of G. virens, GC27 to the **pathogen** was not affected by the type of nitrogen sources in the medium, but that of T. harzianum T42 with low antibiotic activity was increased by ammonium tartrate or NH4NO3. Addition of chitin, cell wall preparation of the **pathogen** , cellulose, and organic sources such as ground wheat bran, malt, rice straw and corn into synthetic medium had no effect on antibiotic activity of T. harzianum T42. Mycelial growth and conidial germination of the **pathogen** by G. virens GC27 were not affected by fungal cell wall components, whereas those were inhibited greatly by wheat bran or malt addition to the mineral medium. Addition of chitin or wheat brain into synthetic medium enhanced the mycoparasitism of T. harzianum T42. The incorporation of G. virens GC27 or T. harzianum T42 cultured on wheat bran media into **sterilized** soil infested with the **pathogen** was much more effective in reducing the incidence of cucumber wilt caused by F. oxysporum f.sp. cucumerinum than the application of conidial suspension without organic food base was in pot experiments. The wheat bran cutlure of G. virens GC27 added with or without inorganic nutrients decreased the disease incidence by 54.2 .apprx. 59.1% compared to that of control without **antagonist** . The application of wheat bran culture of T. harzianum T42 mixed with inorganic nutrients as decreased the incidence of cucumber wilt by 52.3 .apprx. 59.7%, whereas without inorganic nutrients mixture, disease incidence was reduced by only 18.2%. The treatment of **seeds** with two **antagonists** and chitin addition to soil incorporated with **antagonists** did not have significant effects on the control of cucumber wilt.

1989

25/3,AB/9 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04230928 Genuine Article#: RQ131 Number of References: 35
Title: ENTEROBACTER-CLOACAE IS AN ENDOPHYTIC SYMBIONT OF CORN (Abstract Available)
Author(s): HINTON DM; BACON CW
Corporate Source: USDA ARS,RUSSELL RES CTR,TOXICOL & MYCOTOXIN RES UNIT,POB 5677/ATHENS//GA/30604; USDA ARS,RUSSELL RES CTR,TOXICOL & MYCOTOXIN RES UNIT/ATHENS//GA/30604
Journal: MYCOPATHOLOGIA, 1995, V129, N2, P117-125
ISSN: 0301-486X
Language: ENGLISH Document Type: ARTICLE
Abstract: The bacterium Enterobacter cloacae is presently used for biocontrol of postharvest diseases of fruits and vegetables and as a preplant seed treatment for suppression of damping-off. This bacterium has apparent affinities for several grass species, but it is not considered to be an endophyte. While screening corn for fungi and bacteria with potential for biocontrol of various corn diseases, the surface- **sterilized** kernels of one unknown Italian corn cultivar produced fungus-free corn seedlings with roots endophytically infected by E. cloacae. This paper describes the microscopic nature off. cloacae RRC 101 with corn, and the in vitro control of Fusarium moniliforme and other fungi with this bacterium. Light and electron microscopy determined that this isolate of E. cloacae was biologically associated with corn seedling roots, where it was distributed intercellularly within the cortex and stele. This is a first report of a strain of this bacterium as an endophytic symbiont of roots. Following a topical application of E. cloacae to kernels, and upon germination this bacterium readily infected roots of two other corn cultivars. The bacterium was observed within the endosperm of germinating corn seedling, but germination was not affected. Further, the bacterium was isolated from leaves and stems of 3- to 6-week-old seedlings indicating that the above ground portions of corn were also colonized. There was no evidence of damage to cells of the root during a three to four week observation period. This bacterium was **antagonistic** to several isolates of the corn **pathogen** Fusarium moniliforme, and to two other species of fungi, all of which produce mycotoxins on corn.

25/3,AB/10 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04989532 JICST ACCESSION NUMBER: 01A0837664 FILE SEGMENT: JICST-E
Control of bacterial hull withering, bacterial damping-off and bakanae disease of rice with an antagonistic **bacterium. (Ministry of Agriculture, Forestry and Fisheries, Agriculture, Forestry and Fishery Res. Council Secretariat S).**
MIYAKAWA HISAYOSHI (1); NAKAYASU KAZUHIRO (1); OKUDA MITSURU (1); TAKAYA SHIGEO (1); TSUNODA YOSHINORI (1)
(1) Minist. of Agric., For. and Fish., Chugoku Natl. Agric. Exp. Stn.
Norin Suisankei Seitai Chitsujo no Keimei to Saiteki Seigyo ni kansuru Sogo Kenkyu (Baiokosumosu Keikaku) Seikashu. Heisei 13nen, 2001, PAGE.16-17 , FIG.1, TBL.1
JOURNAL NUMBER: N20011779E
UNIVERSAL DECIMAL CLASSIFICATION: 633.18 632.3/.4 632.937
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: After seedling transplantation from nursing boxes became a mainstream practice in paddy field cultivation of rice, bacterial diseases that had not occurred during the time of seedling bed began to manifest as problems. Seedling blight by rice hull withering bacterium appeared for the first time in Fukushima Prefecture in 1974 and bacterial damping-off of rice seedling appeared for the first time in Chiba Prefecture in 1982. They then spread to other wide areas. These diseases have been controlled by seed **sterilization** with agricultural chemicals. Disease control methods that do not rely on agricultural chemicals are desired by the public, who are developing interests in an

agricultural system for environmental conservation. The aim of this study was to develop control methods using **antagonistic microorganisms** . Effective controls were achieved against bacterial withering of rice hull (seedling blight) and bacterial damping-off of seedling by seed dipping, seed dusting and mixing of cover soil with a preparation of an **antagonistic** bacterium CAB-02 after immersion of rice **seeds** . It was also effective in controlling bakanae disease. Furthermore, spraying CAB-02 on rice paddy fields suppressed the development of bacterial withering of hull (hull withering disease). CAB-02 was not pathogenic to major crops. It was expected to control these diseases of the crops.

25/3,AB/11 (Item 2 from file: 94)

04512078 JICST ACCESSION NUMBER: 00A0280684 FILE SEGMENT: JICST-E
Biological Control of the Soft Rot of Chinese cabbages by Fluorescent Antagonistic **Bacterium.**
TOGASHI JIRO (1); UEHARA DAISUKE (1); NAMAI TSUNEO (1)
(1) Yamagata Univ., Fac. of Agric.
Yamagata Daigaku Kiyo. Nogaku(Bulletin of the Yamagata University. Agriculture Science), 2000, VOL.13,NO.3, PAGE.225-232, TBL.5, REF.27
JOURNAL NUMBER: G0695AAO ISSN NO: 0513-4676 CODEN: YDKNA
UNIVERSAL DECIMAL CLASSIFICATION: 632.937 635.1/.8 632.35
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: The present study was carried out to confirm whether or not that the soft rot of Chinese cabbages(Brassica campestris, pekinensis group) was biologically controlled by fluorescent bacterium **antagonistic** to the pathogenic bacterium. First, the fluorescent bacterium was tried to isolate from rhizospheres of vegetables, weeds and wild grasses by the dilution plating method with King's B medium around Tsuruoka, Yamagata Pref. during May to Nov. in 1997. One handred and fifty six fluorescent bacterial strains were isolated from 28 species of the plants tested. **Antagonistic** activity of the isolates to the soft rot bacterium was assayed by using 5 strains of the organism(Erwinia carotovora subsp. carotovora) as indicator. Out of the isolates, 46 isolates were **antagonistic** on PDA and 74 isolates on King's B medium, respectively. In the present experiments, 4 strains showing wide **antagonistic** spectrum were used; No.75 and No.214 from Chinese cabbage, No.206 from Kayatsurigusa(Cyperus microira) and No.211 from Oarechinokiku(Erigeron sumatrensisand). After the organisms were grown in broth by shaking at 25.DEG.C. for 24hrs, they were centrifuged(8000*g, 10min.) and the bacterial cells were resupended in **sterilized** water(108cfu/ml). In order to examine the efficacy of the organisms to control of the disease, the following treatments were conducted; (A) bacterization of **seeds** by dipping in the suspensions, (B) bacterization of rhizoplanes of seedlings which were seeded in **sterilized** soil and were transplanted after dipping of rhizoplanes in the suspensions and (C) spraying of the suspensions to leaf surfaces several times. Chinese cabbages(cv. Matsushima-kohai W1116) were seeded on April 30(Spring seeding) and Aug. 6(Summer seeding) at our University Farm. Consequently, controlling efficacy was obtained though the degree of the efficacy varied according to the antagonisitic bacterial strains, treatment method, growing stages and seasons of Chinese cabbages. (author abst.)

25/3,AB/12 (Item 3 from file: 94)

02006497 JICST ACCESSION NUMBER: 94A0280415 FILE SEGMENT: JICST-E
Effect of Benomyl on Seedling Rot of Rice(Pseudomonas glumae) and Microbial

Interactions on Germinating Rice Seeds .

GOTO M (1); TAKAGAKI M (1); KODERA A (1); TAKIKAWA Y (1); TSUYUMU S (1)
(1) Shizuoka Univ., Shizuoka, JPN

Nippon Shokubutsu Byori Gakkaiho(Annals of the Phytopathological Society of Japan), 1994, VOL.60,NO.1, PAGE.74-81, FIG.3, TBL.4, REF.9
JOURNAL NUMBER: F0893AAF ISSN NO: 0031-9473 CODEN: NSBGA
UNIVERSAL DECIMAL CLASSIFICATION: 632.35 632.952/.953
LANGUAGE: English COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

ABSTRACT: Pseudomonas glumae grew on potato-dextrose agar plates containing benomyl at the concentration of 500 to 1,000.MU.g/ml depending on the strains, but not at 1,500.MU.g/ml. The growth inhibition resulted from bacteriostatic action of the chemical. Cultures of the bacterium contained benomyl-resistant mutants at various frequencies depending on the strains. Virulence of these mutants was identical to that of the parent strains. Regardless of the presence of such resistant mutants, seedling rot of rice was effectively controlled by seed-dressing with 0.1%(w/w) benomyl or 0.5 to 1.0% Benlate or Benlate-T. Such suppressive effect was not observed when **sterilized** rice grains were used. The population of P. glumae was significantly suppressed on benomyl-treated **seeds** , but rapidly increased on untreated **seeds** . On the contrary, saprophytic bacteria, particularly fluorescent pseudomonads, substantially increased on benomyl-treated **seeds** , but not on untreated **seeds** . The fluorescent pseudomonads inhibited growth of P. glumae in vitro and significantly suppressed development of seddling rot in situ as well. They were identified as P. fluorescens and the production of growth inhibitory substances was confirmed in liquid media. These observations suggested that the efficacy of benomyl aginst seedling rot of rice resulted from the **antagonistic** effect of P. fluorescens which preferentially proliferated on the benomyl-treated **seeds** . (author abst.)

30/3,AB/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11389960 BIOSIS NO.: 199800171292
Selection of biological control agents for controlling soil and seed - borne diseases **in the field.**
AUTHOR: Knudsen I M B(a); Hockenhull J(a); Jensen D Funck(a); Gerhardson B; Hokeberg M; Tahvonen E; Teperi E; Sundheim L; Henriksen B
AUTHOR ADDRESS: (a)Royal Vet. Agric. Univ., Plant Pathol. Sect., Dep. Plant Biol., Thorvaldsensvej 40, DK-1871 Fred**Denmark
JOURNAL: European Journal of Plant Pathology 103 (9):p775-784 Dec., 1997
ISSN: 0929-1873
DOCUMENT TYPE: Literature Review
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Different screening methods for selection of biological control agents (BCAs), for controlling soil and seed-borne diseases, are discussed. The shortcomings of laboratory methods focused on mechanism of action are discussed and we conclude that these methods should be used with caution if candidates with multifactorial or plant mediated mechanisms of control are to be obtained. In vitro screens may be useful for specific groups of microorganisms, thus, screens for antibiotics may be relevant for Streptomyces spp., and promising results have been obtained using soil plating or precolonized agar methods to screen for mycoparasitism and competitive saprophytic ability. Experience with screening in the Nordic programme 'Biological control of seed borne diseases in cereals' is summarized. Research in the four participating countries - Finland, Sweden, Norway and Denmark - followed the same paradigm: that of obtaining antagonists, well adapted to different Nordic environments, and developing them as effective BCAs. Potential antagonists were isolated from different sources and in planta screening methods were developed in order to optimize selection of antagonists effective against a range of seed borne pathogens. Screens in the laboratory or greenhouse were followed by screening in the field. The different screening procedures are compared and evaluated.

1997

30/3,AB/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10841208 BIOSIS NO.: 199799462353
Biological control of cereal seed - borne diseases **by seed bacterization with greenhouse-selected bacteria.**
AUTHOR: Hokeberg Margareta; Gerhardson Berndt; Johnsson Lennart
AUTHOR ADDRESS: Plant Pathol. Biol. Control Unit, Swedish Univ. of Agric. Sci., P.O. Box 7044, S-750 07 Uppsala**Sweden
JOURNAL: European Journal of Plant Pathology 103 (1):p25-33 1997
ISSN: 0929-1873
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: About 400 bacterial strains, isolated from roots of wild and cultivated plants, were screened for effects against diseases caused by Drechslera teres and/or Microdochium nivale in greenhouse tests and against common bunt caused by Tilletia caries in field tests. Four of the strains showed good biocontrol activity (gt 70% disease reduction) against D. teres and T. caries both in screenings and field tests. One Pseudomonas isolate, MA 342, strongly and reliably suppressed both D. teres and T. caries in the field, while effects against M. nivale were weaker. The effects could not be enhanced by varying pre-application or seed application procedures. This isolate could be stored as a suspension in a refrigerator, frozen or applied to seeds for at least one month without loosing its disease controlling ability.

1997

30/3,AB/3 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10199870 BIOSIS NO.: 199698654788
Distribution of saprophytic fungi antagonistic **to Fusarium culmorum in two differently cultivated field soils, with special emphasis on the genus Fusarium.**
AUTHOR: Knudsen Inge M B(a); Elmholt Susanne; Hockenhull John(a); Jensen Dan Funck(a)
AUTHOR ADDRESS: (a)Plant Pathol. Section, Dep. Plant Biol., Royal Veterinary, Agric. Univ. Thorvaldensevej 40, DK-1**Denmark
JOURNAL: Biological Agriculture & Horticulture 12 (1):p61-79 1995
ISSN: 0144-8765
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The purposes of the present study were to search for antagonistic fungi to control seed-borne diseases of cereals caused by Fusarium culmorum (W.G.Sm) Sacc. and to use these results to compare the distribution of non-pathogenic Fusarium spp. and other fungi antagonistic to Fusarium culmorum in soil and on straw particles in an organically and a conventionally cultivated field. The organic farm had been cultivated according to the principles of Steiner (1963) since 1952. The sites were similar with respect to climatic conditions, soil type and vegetation. There was no difference in the total number of antagonistic fungi isolated from the two differently cultivated fields, but the results for Fusarium spp. showed effects of the actual crop as well as the cropping system. Soil sampling over a three year period at the organically cultivated farm in two crops - winter wheat or a mixture of grass and clover showed almost twice as many species of Fusarium in the mixed crop compared to monoculture. In mixed crop fields, the percentage of F. culmorum in relation to total isolations of fusaria was 20% in the organically cultivated field compared with 45% in the conventionally cultivated field. These results indicate that pathogenic fusaria may be suppressed by antagonistic fusaria to a larger extent in the organically cultivated field than in the conventionally cultivated field. In accordance with this, a higher number of antagonistic fusaria was found in the organically farmed field (14) compared to three in the conventionally farmed field. This was partly a result of a higher number of isolated fusaria and a higher number of different species of Fusarium in the organically cultivated soil (total number of non-pathogenic fusaria was 10 in the conventionally cultivated field and 56 in the organically cultivated field). However, it also seems to reflect an enrichment of fusaria with antagonistic properties towards F. culmorum. Thus, the occurrence of F. culmorum was 1.7 times higher in the organically cultivated field while the occurrence of its antagonists was 4.6 times higher in the organically compared with the conventionally cultivated field.

1995

30/3,AB/4 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

08962266 Genuine Article#: 349RZ Number of References: 30
Title: Pseudomonas chlororaphis strain Sm3, bacterial antagonist **of Pratylenchus penetrans** (ABSTRACT AVAILABLE)
Author(s): Hackenberg C; Muehlchen A; Forge T; Vrain T (REPRINT)
Corporate Source: AGR & AGRI FOOD CANADA,PACIFIC AGRI FOOD RES CTR, HIGHWAY 97/SUMMERLAND/BC V0H 1Z0/CANADA/ (REPRINT); AGR & AGRI FOOD

CANADA,PACIFIC AGRI FOOD RES CTR/SUMMERLAND/BC V0H 1Z0/CANADA/
Journal: JOURNAL OF NEMATOLOGY, 2000, V32, N2 (JUN), P183-189
ISSN: 0022-300X Publication date: 20000600
Publisher: SOC NEMATOLOGISTS, 3012 SKYVIEW DRIVE, LAKELAND, FL 33801-7072
Language: English Document Type: ARTICLE
Abstract: The interaction of Pseudomonas chlororaphis strain Sm3 and the root-lesion nematode Pratylenchus penetrans was investigated in three separate greenhouse experiments with soils from southern British Columbia, Canada. The bacteria were applied to the roots of strawberry plants and planted in unpasteurized field seas, with natural or supplemented infestation of P. penetrans. Nematode suppression in roots was evident after 6 or 10 weeks in all experiments. Root or shoot growth were increased after 10 weeks in two experiments. Population dynamics of P. chlororaphis Sm3 in the rhizosphere was followed using an antibiotic-resistant mutant of P. chlororaphis Sm3. There was no apparent correlation between bacterial density in the rhizosphere and P. penetrans suppression in strawberry roots and rhizosphere soil, although the soil with the highest nematode reduction also had the largest P. chlororaphis Sm3 population in the rhizosphere.

30/3,AB/5 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

07213275 Genuine Article#: 138AL Number of References: 26
Title: Performance of the Pseudomonas chlororaphis biocontrol agent MA 342 against cereal seed - borne diseases **in field experiments** (ABSTRACT AVAILABLE)
Author(s): Johnsson L (REPRINT) ; Hokeberg M; Gerhardson B
Corporate Source: SLU,PLANT PATHOL & BIOCONTROL UNIT, POB 7035/SE-75007 UPPSALA//SWEDEN/ (REPRINT)
Journal: EUROPEAN JOURNAL OF PLANT PATHOLOGY, 1998, V104, N7 (SEP), P 701-711
ISSN: 0929-1873 Publication date: 19980900
Publisher: KLUWER ACADEMIC PUBL, SPUIBOULEVARD 50, PO BOX 17, 3300 AA DORDRECHT, NETHERLANDS
Language: English Document Type: ARTICLE
Abstract: The bacterial biocontrol agent Pseudomonas chlororaphis, strain MA 342, was tested for activity against a number of cereal seed-borne diseases in a total of 105 field experiments carried out at different locations in Sweden during the years 1991-1996. Bacterial liquid culture was directly applied to pathogen-infested seeds of barley, oats, wheat and rye without additives. The seeds were then dried and sown in field together with fungicide-treated and untreated seeds used as controls. The bacterization controlled seed-borne diseases caused by Drechslera (Pyrenophora) graminea, D. teres, D. avenae, Ustilago avenae, U. hordei, and Tilletia caries, as effectively as guazatine + imazalil, and these effects were consistent over the years and over varying climatic zones. Diseases caused by pathogens like U. nuda, soil-borne I: caries and I: contraversa were not controlled and the bacterization gave less than full effect against diseases caused by Microdochium (Fusarium) nivale, and Bipolaris sorokiniana (Cochliobolus sativus). Bacterized seeds could be stored dry for at least two years without losing the disease suppressing effect of the bacterial treatment, when tested in the field.

30/3,AB/6 (Item 1 from file: 50)
DIALOG(R)File 50:CAB Abstracts

02611509 CAB Accession Number: 922323971
Biological control of seed - borne diseases **of linseed.**
Mercer, P. C.; Papadopolous, S.
Plant Pathology Research Division, Department of Agriculture for Northern Ireland and Department of Mycology and Plant Pathology, The Queen's University of Belfast, Newforge Lane, Belfast BT9 5PX, UK.

Conference Title: Proceedings of meeting on biological control of pests and diseases 20-21 September 1990, Agriculture and Food Science Centre, Belfast
p.19-26
Publication Year: 1990
Editors: McCracken, A.R.; Mercer, P.C.
Publisher: Department of Agriculture for Northern Ireland -- Belfast, UK
ISBN: 0-85389-370-5
Language: English
Document Type: Conference paper
Seed-borne pathogens, particularly Alternaria linicola, can be a major problem in the production of certified seed and the establishment of a good plant stand of this crop. Following the appearance of strains of the pathogen resistant to iprodione, the possibility of biological control was investigated. In preliminary trials with selected antagonists, germination of both clean and contaminated seed was reduced. Although the level of A. linicola on contaminated seed was lower, the antagonists tended to be pathogenic to the seedlings. Antagonists increased the percentage of healthy plants growing from contaminated seed, the most effective being a Bacillus sp. and an isolate of Trichoderma harzianum. With a few exceptions, antagonists reduced root and shoot lengths. There was considerable variation in the effects of Trichoderma spp., and even with the same sp. Epicoccum nigrum and A. alternata proved disappointing. 2 ref.

30/3,AB/7 (Item 2 from file: 50)
DIALOG(R)File 50:CAB Abstracts

01413602 CAB Accession Number: 841394696
Preliminary experiments into the use of Streptomyces spp. isolated from peat in the biological control of soil and seed - borne disease **in peat culture.**
Tahvonen, R.
Univ. Helsinki, Finland.
Journal of the Scientific Agricultural Society of Finland vol. 54 (5): p.357-369
Publication Year: 1982 --
Language: English Summary Language: finnish
Document Type: Journal article
S. spp. isolated from peat effectively inhibited the growth of Alternaria brassicicola, Fusarium culmorum, F. sulphureum (Gibberella cyanogena), Pythium debaryanum and Rhizoctonia solani on PDA, but S. spp. from fine sand soil were ineffective against F. culmorum compared with peat isolates. Treatment of cauliflower seeds with S. spp. from peat effectively controlled damping off caused by A. brassicicola and R. solani when the seedlings were grown on either disinfected or fresh peat. Spraying the seeding layer of peat substrate with a suspension of S. reduced damage to barley by F. culmorum and damping off of sugar beet caused by Pythium debaryanum. 11 ref.

30/3,AB/8 (Item 1 from file: 65)
DIALOG(R)File 65:Inside Conferences

03526662 INSIDE CONFERENCE ITEM ID: CN037161706
183-Potential of the use of microbial antagonists **for control of** seed - borne diseases **on cereals**
Koch, E.; Lindner, K.
CONFERENCE: Deutsche Pflanzenschutztagung-52
MITTEILUNGEN-BIOLOGISCHEN BUNDESANSTALT FUR LAND UND FORSTWIRTSCHAFT, 2000; HEFT 376 P: 192
Biologische Bundesanstalt fur Land-und Forstwirtschaft, 2000
ISSN: 0067-5849 ISBN: 3826333535
LANGUAGE: German DOCUMENT TYPE: Conference Preprinted abstracts

CONFERENCE SPONSOR: Biologische Bundesanstalt fur Land-und
Forstwirtschaft
Pflanzenschutzdienst der Lander
Deutsche Phytomedizinische Gesellschaft
CONFERENCE LOCATION: Freising-Weihenstephan, Germany 2000; Oct (200010)
(200010)

30/3,AB/9 (Item 1 from file: 76)
DIALOG(R)File 76:Life Sciences Collection

01988471 3844126
Biocontrol of seedling diseases of barley and wheat caused by Fusarium culmorum and Bipolaris sorokiniana: Effects of selected fungal antagonists **on growth and yield components**
Knudsen, I.M.B.; Hockenhull, J.; Jensen, D.F.
Plant Pathol. Sect., Dep. Plant Biol., Royal Vet. and Agric. Univ., Frederiksberg, Denmark
PLANT PATHOL. vol. 44, no. 3, pp. 467-477 (1995)
ISSN: 0032-0862
DOCUMENT TYPE: Journal article LANGUAGE: ENGLISH
SUBFILE: Microbiology Abstracts C: Algology, Mycology & Protozoology; Microbiology Abstracts A: Industrial & Applied Microbiology

The purpose of this study was to verify, under natural conditions, biological control effects obtained in a former screening programme against Fusarium culmorum. The most successful antagonists against seedborne Fusarium culmorum and Bipolaris sorokiniana were isolates of Chaetomium sp., Idriella bolleyi and Gliocladium roseum. These results were also obtained when the antagonists were applied to B. sorokiniana-infected barley sown in field soil in pots. In field experiments G. roseum gave the best control of F. culmorum in winter wheat. One month after sowing, germination increased by 170%, the disease index decreased by 73% and plant dry weight increased by 25%, compared to untreated plots. At harvest, the number of tillers per row was found to have increased by 53%, yield had increased by 160% and the 1000-grain weight had increased by 4%. For all evaluated parameters the effect was significantly different from the untreated plots and not significantly different from the plots treated with the fungicide, Sibutol LS 280. I. bolleyi gave a lower but still significantly effective control, when evaluated for disease index and numbers of tillers per row, while Chaetomium sp. did not show any reduction in the disease. Furthermore, in field experiments using barley infected with B. sorokiniana, a significant effect of G. roseum was demonstrated as increased plant dry weight after 1 month and increased 1000-grain weight at harvest. The disease, controlling effect of G. roseum on F. culmorum was shown in a field experiment with spring barley.

30/3,AB/10 (Item 1 from file: 306)
DIALOG(R)File 306:Pesticide Fact File

00001385 PFF RECORD NUMBER: 660
PREFERRED NAME: Streptomyces griseoviridis
ACTIVITY: Biological agent
CHEMICAL CLASS: bacterium

MAMMALIAN TOXICOLOGY
SKIN AND EYE: Acute percutaneous LD50
OTHER: Not hazardous to animals according to animal studies. No allergic responses or health problems have been observed by research workers, manufacturing staff or users, when the product is used in accordance with the directions for use. Inhalation of the fine powder and skin contact should be avoided by using normal protective equipment.

ECOTOXICOLOGY

BIRDS: NOEL for bobwhite quail or mallard ducks 2.45 x 10/SUP 9 cfu/kg.
FISH: Not toxic; NOEL for rainbow trout 5000 cfu/ml.
BEES: NOEL 9.8 x 10/SUP 8 cfu/kg.
DAPHNIA: NOEL 10/SUP 4 cfu/ml.
DATA PRESENT: Chemical Class; Stability; Production; Mode of Action; Uses ; Formulations; Compatibility; Brand Names; Manufacturer; Supplier; Mammalian Toxicology; Ecotoxicology; Environmental Fate; Strain

31/TI/1 (Item 1 from file: 94)

Preparation and Mechanical Properties of Sodium-Alginate-based Hydrogel as a Matrix of Embryo.

31/TI/2 (Item 2 from file: 94)

Varietal differences and effects of basal media on somatic embryogenesis in celery.

31/TI/3 (Item 3 from file: 94)

Production of somatic hybrid plants between Solanum melongena and Solanum toryum through protoplast fusion.

31/TI/4 (Item 4 from file: 94)

Production of somatic hybrid plants between tomato and pepino through protoplast fusion.

32/TI/1 (Item 1 from file: 94)

Plastic desiccant "Dry keep".

32/TI/2 (Item 2 from file: 94)

Development and their applications of humidity absorbent plastic materials.

32/TI/3 (Item 3 from file: 94)

How to use functional packaging materials practically. Q&A on 23 items. A guide to packaging technology. Question 4. (humidity) ; what are characteristics and effective use of plastic hygroscopic packaging materials?

32/TI/4 (Item 4 from file: 94)

New clinical laboratory tests. Clinical biochemistry. Tumor Markers. Sialyl SSEA-1.

32/TI/5 (Item 5 from file: 94)

Studies on false positive reaction in assay of anti-ATLA antibody using

eitest-ATL.

32/TI/6 (Item 6 from file: 94)

Studies on serum sialyl SSEA-1 in primary hepatocellular carcinoma.

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File   9:Business & Industry(R) Jul/1994-2002/Apr 09
         (c) 2002 Resp. DB Svcs.
File  16:Gale Group PROMT(R) 1990-2002/Apr 09
         (c) 2002 The Gale Group
File  18:Gale Group F&S Index(R) 1988-2002/Apr 09
         (c) 2002 The Gale Group
File  20:Dialog Global Reporter 1997-2002/Apr 10
         (c) 2002 The Dialog Corp.
File 148:Gale Group Trade & Industry DB 1976-2002/Apr 09
         (c)2002 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
         (c) 1999 The Gale Group
File 285:BioBusiness(R) 1985-1998/Aug W1
         (c) 1998 BIOSIS
File 481:DELPHES Eur Bus 95-2002/Mar W5
         (c) 2002 ACFCI & Chambre CommInd Paris
File 583:Gale Group Globalbase(TM) 1986-2002/Apr 09
         (c) 2002 The Gale Group
File 621:Gale Group New Prod.Annou.(R) 1985-2002/Apr 09
         (c) 2002 The Gale Group
File 635:Business Dateline(R) 1985-2002/Apr 10
         (c) 2002 ProQuest Info&Learning
File 636:Gale Group Newsletter DB(TM) 1987-2002/Apr 09
         (c) 2002 The Gale Group

Set     Items   Description
S1         34   PANTOEA OR LECLERCIA
S2       1562   XANTHOMONAS
S3         64   SEED()BORNE()DISEASE? OR SEED()DISEASE?
S4     119255   SEEDS
S5         83   PATHOGEN? ? AND (MICROORGANISM? OR MICRO()ORGANISM?) AND A-
                NTAGONISTIC?
S6      43964   STERILIZ? OR STERILIS? OR STERILANT
S7      41255   ANTAGONIST?
S8          2   S1 AND S2
S9          2   RD (unique items)
S10         0   S3 AND S5
S11         0   S3 AND S6
S12         5   S5 AND S6
S13         4   RD (unique items)
S14         4   S13 NOT S9
S15         3   S4 AND S6 AND S7
S16         3   RD (unique items)
S17         3   S16 NOT (S9 OR S13)
S18         0   S3 AND S7
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9/3,K/1 (Item 1 from file: 285)
DIALOG(R)File 285:BioBusiness(R)

00897551
Mechanisms of biocontrol by Pantoea **dispersa of sugar cane leaf scald disease caused by** Xanthomonas **albilineans.**
Zhang L; Birch R G
Dep. Botany, University Queensland, Brisbane, QLD 4072, Australia.
Journal of Applied Microbiology Vol.82, No.4, p.448-454, 1997.

Mechanisms of biocontrol by Pantoea **dispersa of sugar cane leaf scald disease caused by** Xanthomonas **albilineans.**

ABSTRACT: Albicidins, a family of phytotoxins and antibiotics produced by **Xanthomonas** albilineans, are important in sugar cane leaf scald disease development. The albicidin detoxifying bacterium **Pantoea** dispersa (syn. Erwinia herbicola) SB1403 provides very effective biocontrol against leaf scald disease in highly...

...DESCRIPTORS: **PANTOEA** DISPERSA...

... **XANTHOMONAS** ALBILINEANS

9/3,K/2 (Item 2 from file: 285)
DIALOG(R)File 285:BioBusiness(R)

00677496
Identification of gram-negative bacteria isolated from buckwheat seeds.
Iimura K; Hosono A
Motojiya Co. Ltd.,~8-12 Futaba, Matsumoto, Nagano 390, Japan.
Journal of the Food Hygienic Society of Japan Vol.35, No.5, p.525-529, 1994.

...ABSTRACT: and Hokkaido were identified and their phenotypical characters were studied. Glucose-fermentative gram-negative bacteria **Pantoea** agglomerans and Erwinia ananas were identified as dominant bacteria in the seed samples examined. The former gave the highest umber of isolates. On the other hand, Pseudomonas syringae, Pseudomonas oryzihabitans, **Xanthomonas** maltophilia and Flavobacterium aquatil were identified as dominant glucose-non-fermentative gram-negative bacteria.

...DESCRIPTORS: **XANTHOMONAS** MALTOPHILIA...

... **PANTOEA** AGGLOMERANS

14/3,K/1 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

03954220 Supplier Number: 45727728 (USE FORMAT 7 FOR FULLTEXT)
NEVADA'S JAY: PATHOGEN **REDUCTION MAY ALSO BE RISKY**
Food Chemical News, v37, n25, pN/A
August 14, 1995
Language: English Record Type: Fulltext
Document Type: Newsletter; Trade
Word Count: 233

(USE FORMAT 7 FOR FULLTEXT)
NEVADA'S JAY: PATHOGEN **REDUCTION MAY ALSO BE RISKY**
TEXT:
The recent drive to produce ground beef with fewer and fewer **microorganisms** may play a key role in the recent upswing of foodborne disease outbreaks, said University...
... hemorrhagic colitis, listeriosis and salmonellosis, just as the meat industry has been pushing harder to **sterilize** its products.
What may have changed, he suggested, was that cleansing agents are reducing not just the bad bacteria but the background flora known to be **antagonistic** toward **pathogens** . When these are gone, **pathogens** are able to grow, said Jay's speech, "Fresh Foods with Low Numbers of **Microorganisms** May Not Be the Safest Foods."
Congress, courts and public interest groups are busy trying...

...these products but that is not realistic, said Jay. While not opposed to the recent **pathogen** reduction proposal, Jay said he was concerned that the low numbers of **microorganisms** on meat will leave it defenseless in the event a worker unintentionally contaminates the carcass...

14/3,K/2 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

03915378 SUPPLIER NUMBER: 07610347 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Marketplace knocks notwithstanding, 'fresh guys' are stubborn in defeat.
Saulnier, John M.
Quick Frozen Foods International, v30, n4, p93(5)
April, 1989
ISSN: 0033-6416 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 3881 LINE COUNT: 00311

... procedures based on a hazard analysis formulation and packaging that can control the growth of **microorganisms** ..."
With the average shelf life of chilled products lasting from seven to 21 days, there...from certain strains of bacteria.
Looking toward the future, Dennis speculated that the emergence of **pathogens** capable of growth at low temperatures will necessitate wider adoption of superchill techniques throughout the...

...packaging will take place: "Perhaps one of the most exciting possibilities is the use of **antagonistic** **microorganisms** where food grade microbes will be used to reduce or eliminate undesirable **microorganisms** in foods."
The director-general reported that research is now going on in this area at Campden. Microbes already identified as showing potential **antagonistic** activity include: lactic acid bacteria such as lactobacilli, pediococci, leuconostocs, lactococci; propionic acid bacteria; and... northern California that should be operational later this year.
As vacuum cooking pasteurizes rather than **sterilizes** , shelf-life is limited to only seven to 21 days due to the danger of...

14/3,K/3 (Item 1 from file: 285)
DIALOG(R)File 285:BioBusiness(R)

00912153
Lactic acid bacteria and Aeromonas hydrophila interactions in ready-to-use vegetables: Growth modelling in relation to storage temperature and inoculum size.
Scolari G; Vescovo M; Orsi C; Sinigaglia M; Torriani S
Ist. Microbiol., Univ. Cattolica del Sacro Cuore, Via Emilia Parmense 84, 29100 Piacenza, Italy.
Advances in Food Sciences Vol.19, No.1-2, p.25-30, 1997.

...ABSTRACT: storage at 8 degree C. Mathematical model was used to achieve optimization of Lb. casei **antagonistic** activity toward A. hydrophila in a model system consisting of filter- **sterilized** juice prepared from mixed salad. Storage temperature, inoculum size of Lb. casei and inoculum size...

...to guarantee the safety of the products and to prevent the growth of this emerging **pathogen** .

...DESCRIPTORS: **PATHOGEN** ; ...

... **MICROORGANISM** ;

14/3,K/4 (Item 2 from file: 285)
DIALOG(R)File 285:BioBusiness(R)

00171151
PRODUCTION OF POTATO COMMON SCAB- ANTAGONISTIC **BIOFERTILIZER FROM SWINE FECES WITH STREPTOMYCES ALBIDOFLAVUS.**
Hayashida S; Choi M-Y; Nanri N; Miyaguchi M
DEP. AGRIC. CHEM., FAC. AGRIC., KYUSHU UNIV., FUKUOKA 812, JPN.
Agricultural and Biological Chemistry Vol.52, No.10, p.2397-2402, 1988.

PRODUCTION OF POTATO COMMON SCAB- ANTAGONISTIC **BIOFERTILIZER FROM SWINE FECES WITH STREPTOMYCES ALBIDOFLAVUS.**

ABSTRACT: A biofertilizer, showing **antagonistic** activity against potato common scab in pot tests, was produced from swine feces with a...

...This strain characteristically grew on fresh swine feces at 20 .apprx. 35.degree.C without **sterilization** or any additives, and produced an antibiotic substance against Streptomyces scabies, the common scab-**pathogen** , during composting. The addition of the biofertilizer at from 0.1 g to 1.6...

...4 kg of scab-infected soil in a pot. Thus a biofertilizer suppressing plant pathogenic **microorganisms** was developed.

17/3,K/1 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

08033468 Supplier Number: 66809248 (USE FORMAT 7 FOR FULLTEXT)
A fundamental shift.(Statistical Data Included)
Truelove, Christiane
Med Ad News, v19, n9, p26
Sept, 2000
Language: English Record Type: Fulltext
Article Type: Statistical Data Included
Document Type: Magazine/Journal; Trade
Word Count: 7838

17/3,K/2 (Item 1 from file: 285)
DIALOG(R)File 285:BioBusiness(R)

00915977
Analytical models of weed biocontrol with sterilizing **fungi: The consequences of differences in weed and pathogen life-histories.**
Smith M C; Holt J
Natural Resources Inst., Univ. Greenwich, Central Ave., Chatham Maritime, Kent ME4 4TB, UK.
Plant Pathology (Oxford) Vol.46, No.3, p.306-319, 1997.

Analytical models of weed biocontrol with sterilizing **fungi: The consequences of differences in weed and pathogen life-histories.**

ABSTRACT: A model of the population dynamics of healthy weed plants, weed **seeds** in the soil, pathogen-infected weed plants and pathogen spores in the soil, was devised...

...in weed death rate. With one exception, the use of additional control measures was not **antagonistic** to biocontrol. Often, however, the combined effect was less than additive, and the existence of...

17/3,K/3 (Item 2 from file: 285)
DIALOG(R)File 285:BioBusiness(R)

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EXAMINATION OF MICROORGANISMS AND DETERIORATION RESISTANCE MECHANISMS ASSOCIATED WITH VELVETLEAF (ABUTILON THEOPHRASTI) SEED.
Kremer R J; Hughes L B Jr; Aldrich R J
DEP. AGRIC., WESTERN KENTUCKY UNIV., BOWLING GREEN, KY. 42101.
Agronomy Journal Vol.76, No.5, p.745-749, 1984.

ABSTRACT: Annual weed **seeds** persist in cultivated soils due to seed dormancy and possibly to resistance to microbial attack...

...means of biological control of weeds.) The relationships between microorganisms and velvetleaf (A. theophrasti Medic.) **seeds** were investigated to elucidate the deterioration resistance mechanisms in this species. Microorganisms were isolated from velvetleaf **seeds** matured on the plant and from **seeds** dispersed on the soil surface. An association of sporulating fungi comprised of Alternaria alternata, Cladosporium...

...purpurascens and Fusarium spp. was consistently found on the seed surface. This association persisted on **seeds** after dispersal to the soil. Seed deterioration was infrequent despite abundant microbial growth on the seed surface. About 80% of the bacteria isolated from within **seeds** were **antagonistic** to externally seed-borne fungi. The proportion of surface-**sterilized seeds** with internal fungi was 10%, indicating the seed coat acts as a barrier to most...

...coat and the chalazal area of the embryo. It is suggested that deterioration of velvetleaf **seeds** by microorgannisms is limited by the dense layer of palisade cells in the seed coat...

...compounds within the seed coat that are inhibitory to certain microorganisms outside the seed and **antagonistic** bacteria located within the seed. Resistances to microbial attack may act together with seed dormancy...

...DESCRIPTORS: BACTERIAL **ANTAGONIST** ;